# DOCUMENT RESUME

ED 345 694 IR 015 500

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|---|---|
| AUTHOR | Crystal, Enid |
| TITLE | High Technology Product Training for Sales Representatives of Spectrum Healthcare Solutions and International Business Machines Corporation. |
| PUB DATE | Jun 91 |
| NOTE | 447p.; Master's Thesis, New York Institute of Technology. |
| PUB TYPE | Dissertations/Theses - Masters Theses (042) |
| EDRS PRICE | MF01/PC18 Plus Postage. |
| DESCRIPTORS | Computer Software; Industrial Training; *Instructional Design; Instructional Development; *Merchandising; On the Job Training; Postsecondary Education; Retraining; *Salesmanship; *Sales Workers; Surveys; Training Methods; Training Objectives |
| IDENTIFIERS | IBM Corporation; *Spectrum Healthcare Solutions Inc |

ABSTRACT

This report describes an application of the Instructional Systems Design (ISD) process to a product knowledge training project for Spectrum Healthcare Solutions, Inc., including the steps and substeps in the phases of analysis, design, development, implementation, and evaluation. The training project was designed to address the need for increased technical knowledge for sales representatives who already possessed good salesmanship skills. The project consisted of a training module attended by 20 representatives from Spectrum Healthcare Solutions and 15 from Spectrum's business partner, International Business Machines, Inc. The training, which utilized a variety of media, including transparencies, slides, and live demonstration of computer software, was designed to give the sales representatives the proper amount of product knowledge in a timely, cost-effective manner. In the future, it is expected that the number of customers "lost" because of a lack of knowledge on the part of the sales workers will decrease as a direct result of this training. This report focuses on the strategies used to bring about changes in knowledge about a specific new product, and it contains all procedures, instructional materials, and evaluations involved in the training module. (15 references) (DB)

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The Faculty of the
School of Media and Arts
of The New York Institute of Technology

accepts the
Thesis/Project

# HIGH TECHNOLOGY PRODUCT TRAINING FOR SALES REPRESENTATIVES OF SPECTRUM HEALTHCARE SOLUTIONS AND INTERNATIONAL BUSINESS MACHINES CORPORATION

This project was conducted using the principles and techniques of instructional system design (ISD). The document is a report of the designer's plans and experiences in carrying out the design, development, implementation, and evaluation of the project. A plan, budget, analysis of findings, and recommendations are included.

written by

Enid Crystal

in partial satisfaction
of the requirements for the degree of

Master of Science

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Dr. Angus Reynolds
Associate Dean, Graduate Programs
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June 2, 1991

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# HIGH TECHNOLOGY PRODUCT TRAINING FOR SALES REPRESENTATIVES OF SPECTRUM HEALTHCARE SOLUTIONS AND INTERNATIONAL BUSINESS MACHINES CORPORATION

by

Enid R. Crystal

B.S. 1976, University of Maryland

A Thesis/Project

submitted to The Faculty of the

School of Education

of The New York Institute of Technology in partial satisfaction
of the requirements for the degree of

Master of Science

June 2, 1991

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## ACKNOWLEDGEMENTS

This project could not have been completed without the help and support of my friends and family. Thanks to Dr. Angus Reynolds for his guidance, his sense of humor and for not using a red pen. Thanks also to my "bosslady", Georgeanna Kiser, for her encouragement and for being a terrific role model (so that's what an instructional designer is supposed to do!).

Even though I've never met Bob Mager, I'd like to thank him for the spirit in his work and for the charming way he has of explaining things. I hope that when I grow up things will seem that simple to me.

Most of all, I'd like to thank my husband, Charles, for his patience and support and for being a wonderful life-partner. (He's also a great cook)!

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# CHAPTER 1

# INTRODUCTION

## Overview

This document presents the application of the Instructional Systems Design (ISD) process to a product knowledge training project for Spectrum Healthcare Solutions, Inc. The ISD process includes the steps and substeps in the phases of analysis, design, development, implementation and evaluation. All procedures, instructional material and evaluations are contained within this document.

High-technology companies face a challenge. How can sales representatives be effectively trained about technologically sophisticated products that change several times a year? Sales representatives need product knowledge combined with effective selling skills to make sales.

> "Training departments that take on the product knowledge challenge ... quickly find they have their hands full trying to keep up with such complications as higher (and often more technically mystifying) technology, burgeoning product lines and greater and greater specialization in individual products." (Hequet, 1988)

Yet in most cases, good sales representatives are hired because of their skill with people, not for their technical skills. Conversely, people who are more technically skilled, typically lack the people skills required to become good sales representatives.

For high technology companies, such as software developers, this presents a problem.

Sales representatives need to be able to answer difficult questions about a highly complex product from customers who are becoming increasingly sophisticated.

## Background

Spectrum Healthcare Solutions develops and sells software for hospitals. They have three main product lines which are appropriate for different size hospitals. Hospital size is determined by number of beds. For hospitals with more than 450 beds, Spectrum markets a product called the Series 5000 which runs on an IBM mainframe computer. The Series 5000 contains several core applications that can help the hospital with both financial management and management of clinical data. The Series 5000 product is frequenty updated. New features are added that make the product better for the users or better for data processing departments in the hospital. This is known in the industry as a "new release" and is normally issued annually.

Prior to the designer joining the company, when there was a new release of the Series 5000, everyone in the company who was involved with the product was called into a training session. Sales representatives, sales support people (who demonstrate the product at the client site), installers, and programmers would all attend training sessions together. The instructor in most cases was the project leader for the release. The project leader was the lead programmer for the project. In the training session, the project leader would expound in excruciating detail about the enhancements made in the latest release, talking about "lines of code" and "hooks into databases" which are technically important, but are not what sales representatives need to know.

These training sessions would typically last four days. On or about the second day, the sales representatives would begin to trickle out, although everyone was supposed to stay for the whole session. The sales representatives just could not understand what was begin talked about, nor did they want or need to. As a result, they left the training session frustrated, without getting what product information they did need to sell the product namely, what are the features, functions and benefits of this product. Why are they important to my customers? What is the competition doing in this area and how do we beat them?

## Statement of the Problem

The problem at Spectrum Healthcare Solutions was how to give sales representatives the proper amount of product knowledge in a timely, cost-effective way. The sales representatives were located in nine states in the United States and Canada. The Series 5000 product is a state-of-the-art Hospital Information System which constantly changes.

## Purpose of the Project

The sales representatives and sales managers consistently reported that lack of product knowledge was a major issue affecting sales. The goal of this project is to reduce the number of bids lost due to lack of product knowledge to zero. If Spectrum Healthcare Solutions loses a bid, it will not be due to lack of product knowledge!

Spectrum Healthcare Solutions' data analysts sent surveys to every customer with whom they bid and lost. One of the questions on the survey asked whether or not the sales representatives was knowledgeable about the product being sold. There was a correlation between the number of "lost" bids (customers who chose vendors other than Spectrum Healthcare Solutions) and those replying that the sales representative lacked product knowledge. Of all of the factors affecting lost sales, this was the item over which we in the Education Department had the most control. A summary of the survey conducted in 1990 is shown in Appendix A.

## Definition of Terms

**Beta test** - an way to test software by installing it at a customer site to see how it performs in a real situation prior to general release. After a beta test, the system usually requires minor modifications.

**Core Application** - a component of the software that handles a broad function such as clinical or financial.

**Hospital Information System** - a software program that helps hospital manage their financial and clinical areas.

**Release** - A change in a software program incorporating new features.

Series 5000 - A complex set of software programs developed and sold by Spectrum Healthcare Solutions.

## Assumptions

1. That this project represents a small piece of a larger sales curriculum developed for Spectrum Healthcare Solutions.

## Limitations

1. That the project was designed specifically for Spectrum Healthcare Solutions' and IBM sales representatives who will be selling the Series 5000. The instructional module may not be suitable for use in other type organizations, circumstances, times or countries without appropriate modifications.

## Method and Procedures

The method that will be used in the project conforms to the phases of instructional design outlined in the Joint Services Model of instructional systems design (ISD) developed by Florida State University (1976).

### Analysis

Several types of analysis were conducted prior to undertaking the project. These will be described in detail in the next chapter. A needs analysis was conducted to ascertain whether or not there was a training problem. Several methods were used to conduct the needs analysis. A survey was distributed to all sales managers asking them to list the priority for training of each of Spectrum's products. Data from the win/loss report was analyzed to determine the correlation between losses and low product knowledge.

A task analysis was conducted to determine whether demonstrating product knowledge is part of a sales representative's job. The analysis was done by reviewing written job descriptions and by talking with Area Vice Presidents and Sales Managers who supervise sales people.

### Design

The design was conducted by using an approach decribed by Mager (1984). A team of subject matter experts (SMEs) from various departments within the company was called together to outline the instructional behaviors required to be a successful sales representative. Under the guidance of the designer, the SME team created a course map which clarified the instructional goals of the program as prescribed by Dick and Carey (1985). This project references a part of that course map.

The designer determined that the course be delivered in an instructor-led format, based on various criteria as outlined by Anderson (1983).

### Development

The course was developed from the course map by working with subject matter experts (SME's) in the company. SMEs were asked to develop test questions based on the instructional objectives for each topic in addition to providing the content. The methodology used followed the instructional events described by Gagne (1985). Media to be used included print, overhead transparencies, flip charts and slides.

The training department did not employ any full-time instructors. Instructors had to be borrowed from other departments in the company, such as Product Marketing. These "instructors" would conduct training sessions upon the request of the training department, provided it did not significantly interfere with their other duties. This factor significantly influenced the design and delivery of this training project.

Because sales representative are by nature a competitive group, the designer planned on developing a game that would be both a test of the knowledge gained and an incentive for learning.

### Implementation

The course was to be conducted in March, 1991 after a small group test. The instruction was to take place in a four-day block of time and be held at Spectrum Healthcare Solutions' headquarters in Hauppauge, New York.

### Evaluation

Both a formative and summative evaluation were to be conducted. Data from the formative evaluation would be used to modify the training prior to final delivery.

## Summary

Spectrum Healthcare Solutions needed to give their sales representatives product knowledge about a high-technology software package known as the Series 5000. To design the instruction required an organized methodology, much as is used in software design itself. The project described in this paper focuses on the strategies used to bring about changes in product knowledge.

# CHAPTER 2

# ANALYSIS

## Introduction

Prior to beginning work on the project, the designer undertook a variety of analyses. The purpose of the analyses, simply stated, was to determine whether training was the appropriate solution to the problem. Once determined, further analyses were conducted to ensure the appropriateness of subsequent steps in the project. Other analyses were conducted to determine what characteristics the audience possessed, the budget and organizational constraints, and whether any existing programs could be used. The designer conducted a search of the existing literature to determine how other companies were handling the problem. In this chapter the designer also describes her plan for designing and developing the project, including a project plan.

## Needs Analysis

The designer interviewed sales managers from each of the company's four regions to determine their perception of product knowledge among the sales force. Additionally, data gathered from customer surveys indicated that product knowledge was one factor that caused Spectrum Healthcare Solutions to lose bids against competitors. A new release of the Series 5000 was scheduled for beta test in the latter half of 1991. The salesforce needed to know about the new features available in this release.

A questionnaire was distributed to all Sales Managers asking them to identify those applications on which their sales representatives needed training. Results are indicated in

Table 1, below. These results indicate a high requirements for product knowledge among all regions.

Table 1

**Product Training Requirements**

| REGION | TOTAL POP. | # REQUIRING TRAINING |
|---|---|---|
| East | 12 | 9 |
| MidWest | 10 | 8 |
| South | 10 | 7 |
| West | 11 | 10 |

### Job Task Analysis

The designer reviewed job descriptions of the sales representatives. It was clear that product knowledge is a requirement if a sales representative was to be successful. The job descriptions are shown in Appendix B. The requirement for product knowledge is directly stated in the first paragraph of the job descriptions of both sales representatives and senior sales representatives, and in item number ten of the job description for senior sales representatives.

### Target Population Analysis

The target audience for the project was the Spectrum Healthcare Solutions salesforce which consisted of sales representatives from Spectrum Healthcare Solutions and health sales representatives of International Business Machines Corporation, Spectrum's parent company. The designer gathered information about the population of Spectrum Healthcare

Solutions from the Human Resources Department. Data regarding the sales representatives from IBM were not available to the designer, but can be assumed to closely match the description given here. The salesforce was composed of approximately 50 percent men and women. Time with the company varied from eight years to two months. Most sales representatives were hired from competing companies. Several sales representatives had healthcare backgrounds, but no computer background. One or two had experience selling unrelated software products.

There were a total of 43 sales representatives in the target population. Sales offices are located in the states of New York, Virginia, Florida, Texas, Ohio, Illinois, California, and the city of Toronto, Canada. Several sales representatives work out of their homes.

The age of most of the sales representatives were between the ages of 25 and 45. Only one of the sales representatives was over 45. All sales representatives were college graduates. Several of the sales representatives had Nursing degrees. All of the sales representatives were Caucasian.

**Organizational Constraints**

When this project was developed, Spectrum Healthcare Solutions had no full-time instructors. The designer was faced with the challenge of using resources from other departments to conduct training. These employees had no formal background in instructing or course development to conduct training sessions. Additionally, these employees did not have training listed in their normal job descriptions.

Spectrum Healthcare Solutions was aggressively attempting to cut costs in an effort to improve bottom-line results. The field organization had been told that "non-billable" travel was prohibited. This meant that any travel not resulting in revenue was being scrutinized by the Vice-President of Finance. The designer needed to be certain that the training conducted would be seen by the Finance department as being worth the investment of travel dollars and time or it was possible that no sales representatives from the field would get approval to attend.

## Instructional Goal

Dick and Carey (1985) outline a methodology for deriving a course goal. The designer directed a group of subject-matter experts from within Spectrum Healthcare Solutions in utilizing this methodology to determine the instructional goals for the project. The outcome of this process was the course map shown in Appendix C. The course map is a hierarchical representation of the terminal and enabling objectives related to the major instructional goal, which is defined as: Given appropriate sales collateral and an identified customer, demonstrate product knowledge of the Series 5000.

## Literature, Existing Course, and Material Review

The designer reviewed literature and conducted searches to see what work had been done in developing product training for sales representatives at other high-technology companies. Because of the very specific nature of the project, the designer did not expect to find an off-the-shelf training program that would be suitable.

### Related Theory

The instructional goal defined in this project is in the "verbal information" domain as described by Gagne (1985). The instructional goal requires the learner to retrieve knowledge and state aloud facts and concepts related to the learning. In the case of this project, learners would be required to retrieve appropriate facts from a larger group of facts based on the needs of their customer.

Gagne describes the need for presenting verbal information in a meaningful context. This is especially relevant in the case of training sales representatives. All adult learners want to know "why do I need to know this?". Sales representatives not only want to know "why do I need to know this?", but additionally want to know "how will this knowledge help me make money?"! The designer was very careful to present the information in the project in a meaningful context to enhance learning. In the setting of the training room, the context was that to win the instructional game, they needed to state facts. After training, the facts would be needed to respond to customer questions and challenges and thus, win the deal for the sales representative and increase their commissions.

### Literature Review

The designer conducted a computer search at the New York Institute of Technology library using the ABI Database service. Two searches were conducted. The designer first conducted a search based on the key words "IBM", "Training", and "Sales", believing that IBM was a high-technology company that did a lot of training and that several examples of IBM training its salesforce in product knowledge should be available. The search resulted in 48 references, of which only 4 were actually relevant. The designer then conducted a second search on the terms "Training", "Technology" and "Sales". This search resulted in 209 items, of which 8 seemed relevant. The designer also discovered a generic game which was available from The Training Store. Below are the relevant references.

1. Seller, P. (1988). How IBM Teaches Techies to Sell, Fortune, pp.141-146.

Describes IBM's transfer of twenty-one thousand five hundred employees from manufacturing and administration into marketing and programming and how they were trained to sell. IBM used a self-study system that is essentially an interactive video disc program.

2. Fairbairn, U. (1989). Lessons In Education at IBM, Personnel, pp.12-18. Describes how IBM restructured their education program and moved education out of the classroom and brought it to the students. On any given day eighteen thousand IBM employees are either attending a class or working on self-study courses. When this article was written, only about half of the courses were based in the classroom, saving the company some $430 million in unnecessary costs in 1988.

3. Gschwandtner, G. (1987). An Interview with Buck Rodgers: Selling Solutions at IBM, Management Review, pp. 48-51. Buck Rodgers, the former vice-president of marketing at IBM discussed the company and its commitment to its employees. He says that salespeople need to be taught two things: what the product will do, not what it is, and financial capability.

4. Spooner, P. (1986). Buck Rodgers' Way To the Stars, Chief Executive, pp. 35-36. Buck Rodgers talks about portions of his book on IBM's philosophy and methods as they pertain to training salespeople. It mostly talked about sales skills, not product training.

5. Cothran, T. (1990), Selling New Products and Services, Training, pp. S15-S17. This article describes several firms and how they train salespeople to sell new products. The article describes 3Ms efforts to sell Post-It Notes (they gave away millions of free samples) and an agricultural company that gives its salespeople detailed technical background information so they can inform their customers. The gist of this article was that customers need to be educated about a new product by sales representatives.

6. Leibowitz, Michael. (1988). Electronics Firms Send their SalesForces Back to School, Electronics Business, pp. 62-64. This article describes the importance of sales skills training in the electronics industry.

7. Goldman, S. (1988). Sales Training: Investing in Your Own Future, Cellular Business, pp. 40-43. This article describes steps of the sales cycle in the cellular telephone industry.

8. Anonymous. (1988). How to Spot the High-Tech Hotshots, Agency Sales Magazine, pp.36-39. This article describes how to find technically qualified salespeople and says that in the high-technology area a balance must be achieved between technical and selling skills.

9. Hequet, M. (1988), Product Knowledge: Knowing What They're Selling May Be the Key to How Well They Sell It, Training, pp.18-19,22. As the marketplace gets more crowded and products become more complex, customers are buying from the sales representatives who have the most product knowledge. The article states that training departments that take on the product knowledge challenge must face such complications as higher technology, growing product lines and more specialization in individual products. The article described companies that are turning to technology as a cost-effective delivery mechanism, including portable lap-top computers to deliver computer-based training on the run.

10. Schaff, D. (1988), Sales Training in the Era of the Customer, Training, pp. 3-4. A panel of sales training consultants discusses the current trends in sales training. Trainers must develop more sophisticated applications of product knowledge and market knowledge to respond to market changes, evolving technology, and strategic shifts. The goals should be to equip salespeople to function as an integral part of the customer's business.

11. Vickers, D. (1987). Sales Training: On-Going Programs Are Necessary for High-Tech Firms, Sales and Marketing Mgtmt. in Canada, pp. 17-18. Sales representatives selling high-technology products face particular problems in the marketplace. Such representatives must thoroughly understand the complex sales environment, be able to identify the decision makers, and differentiate a value-added product in sales situations. The article focussed primarily on sales skills.

12. Rosenthal, A. (1986). Directed Support, or Getting Above the Clutter, High-Tech Marketing, pp.50-51. A system known as directed sales support features six basic ingredients to assist sales representatives including continuous training, sales manuals, sales literature that can aid a presentation, demonstration techniques, a hot line for the sales force and a marketing newsletter to help keep the salesforce informed and up to date.

## Survey of Existing Courses and Materials

Due to the very specific nature of the subject matter, the designer did not conduct a survey for existing courses covering the Series 5000 outside of Spectrum Healthcare Solutions. However, the designer did review past internal courses to determine what course material existed. She found that a training session had been conducted approximately a year prior, that it had not been developed by using an ISD methodology, and that it was generally thought to have been ineffective for the sales representatives. Much of the material that was developed did not match the instructional goal of the program. The visual aids (overheads) were primarily "screen dumps" - pictures of what users see when they use the software. The designer decided not to use any of the material from the previous course in her project.

## Plan for Design and Development Effort

After completing the analysis phase, it was determined that the instructional program was to be produced and implemented.

### Estimated Student Effort

The estimated student effort consists of a total of 21 hours of instruction. The instructional module to be presented in this project will require the learner to attend a three-and-a-half day training session.

### Project Plan

A project plan was created to determine the time and cost requirements of the project as well as the sequence of events that needed to occur prior to implementing the training. The project plan as represented by Pert and Gannt charts can be found in Appendix D.

### Budget

Costs of the project are included in the following Table 2. Design cost include estimated salaries of SMEs who were used to develop course map estimated salaries were averaged at $70,000 per year or $33.65 per hour, as well as that of the designer which was $60,000 annual salary or $28.85 per hour. Implementation costs include estimated salaries of instructors plus estimated salaries of sales representatives which were estimated to be $24 per hour. Travel expense for the sales representatives attending from remote locations was averaged at $100 dollars per day.

The cost of implementing the project was estimated at $32,555 which is a good return on investment, when compared with the cost of even one lost bid, which could worth over a half a million dollars of business.

## Summary

The ISD methodology requires planning in order to reach the desired outcome. Planning includes outline tasks involved and the time it takes to perform those tasks. Organizations are concerned about the value of training relative to the benefit to the organization. In the case of this project, the cost of training would be relatively insignificant relative to the potential benefit to the organization of conducting training.

# CHAPTER 3

# DESIGN

## Introduction

The design phase of Instructional design is the one in which the designer creates a "blueprint" of an instructional event. The goals of the project are defined, a task analysis is conducted, pre-requisites are determined, and the designer begins to organize the instruction into a logical sequence. The instructional event begins to take shape in this phase.

## Instructional Task Analysis

The designer assembled a team of subject matter experts from departments to outline what were the required skills of a successful sales representatives required skills. This outline is represented by the course map shown in Appendix C. During the process of creating the course map, the designer and the subject matter experts began to sequence the tasks into a hierarchical structure by asking the subject matter experts "what does the sales representative need to know to do that" whenever an objective was given. In this way, the learning tasks are structured from bottom to top from more basic to more complex. A written outline of this task analysis is included in Appendix E.

## Instructional Objectives

Instructional objectives are a way of determining whether or not the instructional event has been successful. Mager (1985) describes an instructional objective as having three parts: a behavior (what will the learner do), a condition (what will the learner have available), and a criterion for success (with what degree of accuracy or frequency will the learner do it).

Fourteen subordinate objectives supported the instructional goal. These subordinate objectives were that **upon successful completion of this event, learners will be able to:**

1. Given a list of events, detail the history of the Series 5000
2. Given a choice of several resources, identify key Series 5000 resources
3. Correctly identify from a several alternatives, the operating environment including hardware, architecture, operating system and ADS Plus and how each of them benefits customers
4. Given a list of possible answers, match the basic functionality of each core application and departmental
5. Match the current features with the benefits of each core application
6. Explain in short answer format the strategic direction of the series 5000
7. Given a list of possible events, put them in the sequence that correctly describes the install methodology
8. Given a list of vendors, identify the third party products
9. Given a list of competitors, list at least two advantages of Spectrums products over each
10. Identify from a list of possible benefits, how Spectrum's services and support benefit customers
11. Given a matrix of competitors and facts, identify competitors' strong and weak points
12. List sales collateral available

13. Name all five of the factors influencing the pricing process
14. Correctly identify the function of the contracts and proposals dept.

## Entry Behaviors Defined

The scope of this instructional project was limited to product knowledge, which is only one piece of the skills needed to be successful at selling. Participants were expected to attend the course with a basic understanding of the healthcare environment including: the function of various hospital departments and the ability to identify key decision makers in a hospital. An existing course was available called "Marketing to Hospitals" that satisfied the requirements for achieving these prerequisites. Therefore, the course "Marketing to Hospitals" or equivalent knowledge was listed as a prerequisite for attending this event.

## Group and Sequence Objectives

By creating a course map in the analysis phase, the objectives were already in a logical sequence. The designer changed the order from the initial meeting with SMEs only slightly. The final order is outlined on the course outline shown in Appendix F. This course outline was also used to help identify both subject experts and instructors.

## Learning Activities Specification

A variety of media would be used to deliver instruction. However due to budget restrictions and the need to use multiple non-professional instructors, lecture/discussion would be the primary method of instruction. The designer encouraged all of the instructors to develop interactive learning events, and assisted them in that process. The designer planned to create a game as a major learning activity that would incorporate and reinforce all of the objectives from the instructional event.

## Assessment System Specification

A pretest was to be developed to indicate the need for learners to be present at the course. Anyone scoring 65 percent or better on the pretest would be excused. The test would be multiple choice and true-false format for ease of grading. The same test would be given as a post test. A score of 75 percent or better would indicate mastery of the material.

## Evaluation System Specification

The designer planned to use both formative and summative evaluation methods in this project. The formative evaluation was conducted for the purpose of revising the instruction as needed prior to delivering it to the general population. Summative evaluation was used to measure its effectiveness after being conducted.

The designer planned to use two basic phases of formative evaluation in this project: one-to-one and small group evaluation. Budget and time constraints prohibited the use of a field trial.

Summative evaluations were conducted to determine the four levels of evaluation described by Kirkpatrick (1987). The four levels of evaluation he describes are: reaction, learning, behavior or skill application, impact or results. Level 1 evaluation was to be conducted by an audience reaction sheet administered and collected immediately following the instructional event.

Level 2 evaluation, knowledge transfer, would be taken care of by comparing the pretest and post test scores.

Level 3 evaluation would be done by questionnaire to the managers of the trainees approximately 30 days following the instructional event. The managers would be asked to indicate any changes in behavior for each of the instructional objectives covered in training.

Level 4 evaluation would be conducted through comparing data available from Spectrum's analysts regarding the number of losses due to lack of product knowledge. The year before and the year after training would be compared. We would expect to see an decline in these type of losses.

## Learning Transfer System Specification

Broad (1982) identifies numerous activities that can be done to ensure that learning in the training room is used on the job. She identifies activities to be done by learners, and by management before, during, and after training. Beaudin (1987) additionally discusses activities to be done by the training practitioner to enhance learning transfer. The designer identified several activities to be conducted that would enhance the learners' application of the knowledge gained in the training session.

Table 3, below, indicates the actions that each group participating in the project would take and when they would do it.

Table 3

### Learning Transfer Activities

| | BEFORE | DURING | AFTER |
|---|---|---|---|
| TRAINER | Polled sales managers to determine interest in program. | Emphasized how the knowledge learned in training could boost trainees income. | Contact trainees in 2 months to find out if knowledge is being used. |
| LEARNER | Conducted survey of interest in topics for discussion at training. | Participated in games and group activities to reinforce learning | Refered to handouts from the training session. Kept in contact with other class participants. |
| MANAGEMENT | Declared that freeze on non-billable travel did not include travel to training sessions. | Company President participated in training session. | Particpants supervisors asked questions about the training. |

## Review and Selection of Existing Materials

Appendix G indicates the sales collateral (slides) that existed or were in the process of being created, along with the subject matter expert and the instructor. The only existing material other than Spectrum sales collateral that would be used during instruction was the generic game "Money in the Bank" Sales Earning Group, Inc. (1990). The game offered one hundred blank "question" cards, a blank game board, and playing pieces. The advertisement suggested that this generic game could be used for teaching product knowledge. Although the designer needed to create all of the game questions, the basic format and rules were present, cutting down on the development time required. The cost of the game was ninety-five dollars. A set of extra blank cards (four decks of twenty-five cards each) cost twenty-five dollars. All other instructional material was to be created by the designer and the instructors.

## Summary

The design phase lays the groundwork for developing and creating instructional material. Without this "blueprint", an instructional designer could waste many hours developing materials that may not be pertinent to the objectives of the course.

# CHAPTER 4

# DEVELOPMENT

## Introduction

The next stage of the instructional design methodology is the development phase. It is in this phase that the designer creates the learning activities, instructional materials, and test questions that will be used in the course.

## Learning Activity Development Scheme

The project was developed in a collaborative way with the designer and the SMEs creating the course together. Since the designer was not sufficiently knowledgeable about the product to create the course materials, she took the role of advisor to the SMEs. She then guided them in the development process. She kept them focused on developing "lean" which means only including information that is relevant to the target population and directly tied to the objectives. Each SME was assigned to their portion of the project as shown by the Subject Expert Locator chart in Appendix G.

## Learning Activity Development

The designer met with the SMEs individually to develop learning activities that were appropriate for their portion of the project. Together, each SME and the designer completed a worksheet outlining the topic, the key learning points, what instructional method and media would be used, and the learning activities to be used. The designer encountered resistance from some of the SMEs. Not all of them were used to conducting training and those that were usually relied on lecture -- often showing computer screens as their only training media. The designer worked with these SMEs to move them away from this style and into a more interactive style of training. Additionally, each SME was required to develop their own test questions about their portion of the material to be covered. The designer had little control over the SMEs activities, since they all had other primary duties. In some cases the SMEs were higher up in the organization, making it difficult to hold them to schedules and deadlines. The course materials are shown in Appendix H. The goal of the designer was that the instruction would follow Gagne's (1985) nine events of instruction as displayed in Table 3. The learning events listed here are also summarized in Table 3, under "action example".

1. **Gaining Attention.** The session would begin with a demonstration on the importance of product knowledge. Additionally, each SMEs were instructed to open their portion of the program with an attention getter.

2. **Informing learners of the objectives** would be accomplished by reviewing the objectives of the entire course at the beginning of the session. In reviewing the objectives, the WIIFM's (What's In It for Me) would be given. Each SME was instructed to describe their objectives at the beginning of their segment of the program.

3. **Stimulating recall of prior learning** would be accomplished by conducting a pre-test of the material. By completing the pre-test, the participants will be recalling what they already

know about the subject. SMEs were encouraged to refer to previous segments of the program as they related to their topic.

4. **Presenting the stimulus** was to be accomplished through a mixture of auditory and visual techniques.

5. **Providing "learning guidance."** To make the stimulus as meaningful as possible for this learning outcome, which was primarily verbal information. Gagne suggests that content be elaborated to larger bodies of knowledge and that images and mnemonics be used. Learners would be involved in this process by constantly asking during training "why would your customers want to know this?" This would help them internalize the information and link it to their larger body of knowledge about the customer.

6. **Eliciting performance** would be accomplished largely through discussions and activities conducted throughout the session.

7. **Providing feedback** would come mostly from other participants in the program during the discussions and activities.

8. **Assessing performance** would be accomplished through playing the game and through a post-test.

9. **Enhancing retention and transfer** would be aided by providing students with handout material to take back to the job with them.

### Learning Activity Review

The designer reviewed all material developed with each SME and assisted in creating handouts and other material. SMEs had to assess the technical accuracy of their material, while the designer reviewed material for grammar, style, and punctuation.

### Material For Formative Evaluation Produced

The material for evaluation was the same as that planned for use in the final implementation. Most of the slides and overheads already existed for use in presentations to customers. They were the only non-print training material to be used therefore, there was no large expense of time or money involved in producing material that might need to be modified in the final implementation.

### Summary

In developing this project, the designer relied heavily on SMEs. SMEs essentially developed their own instructional activities and materials with guidance from the designer. This was not an ideal way of developing training, since the SMEs had different priorities than the designer. The designer's major challenge was to move the SMEs away from a one-way training style to an interactive one. Another challenge was to have the SMEs provide the designer with any training material at all, since many of them wanted to speak from memory or notes and did not want to produce training material. The designer constantly reminded the SMEs that this was a learning event and not a "presentation" and challenged them to make their portion of the training more interactive.

**Table 4**

**Gagne's Nine Instructional Events**

| INTERNAL PROCESSES AND THEIR CORRESPONDING INSTRUCTIONAL EVENTS, WITH ACTION EXAMPLES | | |
|---|---|---|
| INTERNAL PROCESS | INSTRUCTIONAL EVENT | ACTION EXAMPLE |
| Reception | Gaining Attention | Demonstrate importance of product knowledge. |
| Expectancy | Informing Learners of the Objective | Review course objectives in terms of "WIIFM"s. |
| Retrieval to working memory | Stimulated recall of prior learning | Pre-test of existing knowledge. |
| Selective Perception | Presenting the stimulus | Use a variety of audio/visual techniques including slides, overheads, and videos. |
| Semantic encoding | Providing "learning guidance" | Participants will be asked "why is this important to your customers?" |
| Responding | Eliciting performance | Participants will be involved in discussions and role-plays. |
| Reinforcement | Provide feedback | Participants will give each other feedback during discussions. |
| Retrieval and Reinforcement | Assessing performance | Participants will play a game and take a post-test. |
| Retrieval & Generalization | Enhancing retention and transfer | Handout material will be taken back to the workplace for future reference. |

# CHAPTER 5

# IMPLEMENTATION

## Introduction

The project was implemented April 30 through May 2, 1991 at Spectrum Healthcare Solutions headquarters building in Hauppauge, New York. The class capacity was thirty. Forty-seven people including sixteen from areas of the company other than sales signed up to take the class. Since the number of people registered exceeded the number of seats in the class, the designer had to create a waiting list to keep the class down to a manageable size. Any employee who was not part of the sales organization was put on the waiting list. Additionally, the designer decided to allow only the sales representatives into the class and to increase class capacity to thirty-five.

The day before the class, two people cancelled due to illness. Two people who were on the waiting list were enrolled in the class to fill the vacancies. Thirty-five participants attended the training session of which eighteen were Spectrum sales represenatives, fifteen were IBM sales representatives and two were Spectrum employees from the contracts and proposals group, who also required product knowledge.

## Materials for Implementation Reproduced

A set of each handout was prepared for each participant. Forty sets were prepared, so there would be copies for the "archives". Students created their own manuals by inserting handouts into a loose-leaf binder which the designer provided along with blank dividers. This method allowed students to organize the material as they saw fit.

## Instructional Delivery

The course was attended by thirty-five Spectrum and IBM employees. Ten "instructors" conducted the course. These instructors were subject-matter experts from within the Spectrum corporation. The designer acted in the role of class manager. She started and ended each days session, conducted most of the learning activities, introduced the instructors, and made sure the class kept on schedule.

Minor modifications were made to the original agenda. The final agenda is shown in Appendix I. The class began at 1:00 pm on April 30 and ended at 4:00 pm on May 2nd. There were two breaks each day, one in the morning and one in the afternoon, as well as a lunch break on each full day of instruction.

The instructional game that was ordered from The Training Store was out of stock, and so could not be used for the class. Instead, the designer created another instructional activity. This activity involved breaking the group up into teams, each of which was given information about a competitor. The teams had to analyze the information given to them to find certain information and then present that information to the rest of the group. This activity helped to involve the participants, as well as creating some excellent material for future use by other sales representatives.

The printed learning materials including all handouts and a paper copy of the slides that were used in the training are shown in Appendix H. The actual slides used are the property of Spectrum Healthcare Solutions and are located at 150 Motor Parkway, Hauppauge, New York 11788.

## Data Collection

The only data collected were the reaction sheets for each day. These will be discussed in detail in a later chapter. The designer had planned to have a pre and post test, however, this was not done. The reason there were no tests created is that the designer had instructed the SMEs to create test questions for their portion of the training. None of the SMEs were willing to submit test questions. Therefore, the designer did not create the test. The implications of this are that, in fact, the designer has no real way to measure whether or not knowledge was gained by the training. This will be discussed in a later chapter.

## Summary

The project was implemented on April 30th through May 2nd, 1991. This event marked the first time that Spectrum Healthcare Solutions had ever conducted product training solely for sales representatives. The response to the training was overwhelmingly positive. The designer is concerned, however, that mastery of the material was not acheived. Unfortunately, the only way to determine whether or not the participants mastered the material will be to wait until the next fiscal quarter when the marketing department produces the win-loss ratio. Only by comparing the win-loss ratios before and after training as they relate to product knowledge will the designer be able to prove mastery of the material.

# CHAPTER 6

# EVALUATION

## Introduction

The evaluation portion may be the most neglected step in the instructional design process. There are two main types of evaluation: the formative and the summative. Formative evaluation is used prior to actually delivering the instruction. It allows the designer to modify instruction before the final delivery. Summative evaluation is done to analyze the effectiveness of the instruction. There are four levels of summative evaluation. Both types of evaluation -- formative and summative -- are vital to effective instruction.

## Formative Evaluation

The formative evaluation process is one of the keys to producing good instruction. It allows the designer to assess the effectiveness of the instruction before actually delivering it. Modifications can be made prior to delivering in the real world where mistakes are costly both in dollars and in a trainer's credibility.

### One-on-One Trials

One on one trials are used to test instruction on individuals who represent the target population. More than one of these trials is usually conducted. This process is often used when testing self-instructional material. In the case of this project, it was not practical to conduct a one-on-one trial. Because there were eight instructors with responsibilities other than training, it was difficult to get them together for a even a group trial. Additionally, having eight instructors teach one learner might be intimidating to the learner! Therefore, a one-on-one trial was not conducted.

**Small-Group Trials**

A small group trial is used to test instruction on a group of between three and five individuals who represent the audience. The designer favors this test of instruction because it allows the trial of learning activities that involve small groups or pairs of employees. For this project, this was the only formative evaluation trial that was planned. The small group was to consist of six of the employees who had registered for the class, but were put on a waiting list because the class was full.

The small group trial of this project was to have been conducted a week prior to the implementation date. In addition to conducting a group trial to test the material, the designer wanted to make sure that the instructors were prepared and knew their material. Although the project was designed as a two and a half day class, only one day was allotted for the group trial. The instructors did not really want to "rehearse", so the designer agreed to a one day "walk-through" as opposed to a full "dress rehearsal".

A week prior to the small group trial, two of the instructors called to say that they would not be able to make it due to other commitments. Two days before the trial, another instructor said that she would not be able to attend. The people who cancelled were to be the main instructors -- between them they had about seventy-five percent of the training session. It would not be possible to conduct a trial without them. Therefore, the designer had to cancel the small group trial.

## Pilot Test

A pilot test is actually the first time a whole training session is conducted in total with all of the group exercises and activities. It is conducted with a full-sized group representing the size for which the program is designed. The actual implementation of this project should be considered as a pilot test. It will probably be be conducted on a semi-annual basis.

The material will be modified prior to conducting this program again based on student evaluations. The next time this program is conducted, we will omit the piece that covers "contracts and proposals", since most of the participants did not feel the material was relevant.

Additionally, the designer will create a test of mastery of the material. One of the great things about the pilot test was that one of the key instructors became upset when some of the students were called out of the class by their manager. We discussed the value of having some kind of test to prove that they had learned the material. She agreed that it would have been useful to have a way to measure learning and agreed to assist in the creation of a pre and post test for the next implementation of the training.

## Summative Evaluation

The summative evaluation process is valuable for measuring the effectiveness of training on many levels. Kirkpatrick (1976) describes four levels of summative evaluation. The levels are: reaction, learning, behavior, and results/impact.

## Reaction

The reaction evaluation is the type of evaluation that is most familiar to trainers. A reaction evaluation is also known as a "smile sheet" or a "happiness index." It gauges participants' reaction to a program. Customer satisfaction is a critical part of the viability of a training program or training department -- if people are not satisfied with the training they attend, the word will spread and pretty soon training rooms are empty. This is not a situation most trainers would relish. The value of the reaction evaluation is only as good as the instrument used to gather the data.

The designer had originally planned to use her company's standard reaction sheet to assess the trainees reaction. However, since there were several instructors covering several topics each day, the standard questionnaire would not give the designer useful information. A reaction evaluation form for each day was more appropriate. Each days topics would be listed on the instrument and students would rate each topic individually. The questionnaires were distributed at the conclusion of the training session and gathered right then. The reaction sheets are shown in Appendix J. The objectives for each day were rated on a four point scale, with four being excellent, three being good, two being fair and one being poor. Each days averaged responses are shown in Table 5, below.

**Table 5**

### Daily Evaluation Reactions By Objective

**SERIES 5000 TRAINING SESSION**

**Day 1 Evaluation**

| | **Average** |
|---|---|
| 1.Rate the **OVERALL** value of today's session | 3.4 |
| 2. Rate the value of today's topics: | |
| ◆ Welcome/Strategic Direction | 3.5 |
| ◆ Course overview | 3.7 |
| ◆ Product overview | 3.4 |
| ◆ Product history | 3.4 |
| ◆ Services & Support | 3.1 |
| ◆ Operating environment | 2.6 |

**SERIES 5000 TRAINING SESSION**

**Day 2 Evaluation**

| | **Average** |
|---|---|
| 1.Rate the **OVERALL** value of today's session | 3.4 |
| 2. Rate the value of today's topics: | |
| ◆ Financial Core | 3.7 |
| ◆ Medical Records | 3.2 |
| ◆ Appointment Scheduling | 3.2 |
| ◆ Resources/Sales Collateral | 3.5 |
| ◆ Contracts | 3.0 |

| SERIES 5000 TRAINING SESSION | |
|---|---|
| **Day 2 Evaluation** | |
| | **Average** |
| ◆ Business partners | 2.8 |
| ◆ Departmentals | 3.4 |
| ◆ Prospect profiles/Market Segments | 3.3 |

| SERIES 5000 TRAINING SESSION | |
|---|---|
| **Day 3 Evaluation** | |
| | **Average** |
| 1.Rate the **OVERALL** value of today's session | 3.6 |
| 2. Rate the value of today's topics: | |
| ◆ Clinical Core | 3.9 |
| ◆ Release 10 | 2.9 |
| ◆ Series 5000 Strategic Direction | 3.5 |
| ◆ Pricing | 2.6 |
| ◆ Competitive analysis | 2.9 |

### Learning

A learning evaluation measures whether or not the participants learned what they were intended to learn. Did the course meet the stated objectives? If participants were called together for a training session and were served doughnuts and coffee and dismissed, the satisfaction rating might be high. However, the learning evaluation would show that the objectives had not been met.

The designer in this case has no way of knowing. Due to the failure to create a pre and post test, the only way to know whether mastery of the material occured will be in the evaluation of the company's performance in sales situations, which will not occur until much later.

**Behavior**

Will the trainees use what they learned in the classroom when they return to the job? If participants were taught to put together a piece of equipment, it would be an easy thing to go out to the job site and watch them put together equipment to see if they were doing it the way they were shown in training. The information learned in this project is difficult to measure since it involves the synthesis and analysis of information. The designer would rely on the participants' supervisors to determine what behavior changes had occurred as a result of attending the program.

At Spectrum Healthcare Solutions, the training department had recently introduced an instrument designed to assess whether or not training was effecting on-job performance. Thirty days after all training events, a questionnaire was sent to each participant's manager. The questionnaire is shown in Appendix L. The purpose of the questionnaire is to ascertain whether in the managers view, the person's on-job behavior had changed as a result of training. Since the questionnaire is distributed thirty days after training, the results of this evaluation are beyond the scope of the project.

**Impact/Results**

The designer stated earlier that the goal of the project is to reduce to zero the number of losses due to lack of product knowledge. Measuring this would constitute the impact or results evaluation. What effect did the training have on the organization as a whole? Was the training program worth the money it cost to develop and deliver? Did it pay to have thirty-five sales representatives in class for two and one-half days instead of making sales calls? These are questions training designers need to answer if they are going to be seen as a viable part of their organizations.

Because the information needed to answer the question about the reason for losses is reported by Spectrum's marketing department on a quarterly basis, the results of this evaluation are beyond the scope of this project.

## Learning Transfer

There must be support of management in order for learning to be effectively transferred to the job. Mary Broad (1982) conducted a study in which 74 possible actions were listed that could help increase learning transfer. These actions occurred in three time frames: pre-training, during training and post-training. In each time frame there were activities that top management, supervisors, trainers and the trainees themselves could do to increase learning transfer. As stated in a previous chapter, the designer planned on incorporating some strategies for achieving learning transfer. Below, are the actions that were actually conducted in each time frame.

### Prior

The designer distributed a survey to the people enrolled in the program. The survey asked enrollees to rate the stated program objectives on a scale of 1 - 5 where one was least important and 5 was most important. Additionally, they were invited to make suggestions as to what else they would like to see included in the training. The survey instrument is shown in Appendix M. A summary of the survey results is shown in Table 6. By doing this, trainees felt involved even before setting foot in the classroom.

**Table 6**

**Results of Participant Course Entry Survey**

Registrants were asked to rate the objectives on a scale of 1 to 5 where 5=most important and 1=least important. Following are the averaged responses in priority order.

| Score | Topic |
|---|---|
| 4.5 | Features, Benefits<br>Competitive Advantages of Spectrum<br>Competitors strong/weak points |
| 4.4 | Functionality<br>Strategic Direction |
| 3.6 | Third party products |
| 3.5 | Resources<br>Services & Support |
| 3.2 | Operating Environment |
| 2.8 | Install methodology<br>Pricing process<br>Contract priorities/options |
| 2.4 | History |
| 2.3 | Sales collateral available |

As mentioned in an earlier chapter, sales managers were polled to find out whether or not they would send their representatives to the session and what they felt should be included. This had the effect of getting the sales managers involved way before a date was even set. The instrument used to poll sales managers is shown in Appendix N.

One concern was the top management had declared a freeze on all travel that was "non-billable", that is did not generate revenue. This had a seriously negative effect on a few training sessions conducted prior to this project. The designer worked with upper management to get the word out that this freeze did not apply to training sessions.

**During**

During training, participants were actively involved. One of the most successful uses of active training was the portion of the program dealing with competing companies. Instead of the trainers presenting information about our competitors, the designer created an activity that allowed the participants to teach each other. Information about five competitors were put into separate folders. The participants were divided into five teams. Each team was given a folder and asked to analyze the competitive information contained within. Each team then gave a five minute presentation to the rest of the group about that competitor.

Top management participated during training by kicking off the meeting. The President of Spectrum Healthcare Solutions welcomed the participants and spoke about the strategic direction of the company. He emphasized Spectrum's commitment to education and training. Having him actually participate in the training session sent the message to the participants that this training was important and that they were important.

The trainers emphasized many times during the course of the program how the knowledge gained could boost the participants income by helping them make sales. This was probably the greatest learning transfer strategy of all, because the trainees were motivated to learn!

### After

Managers of participants were to be polled after 30 days to assess the employees change in on-job behavior. The designer issued certificates of completion to the trainees and issued post-test scores to each trainee. Additionally, she planned to contact each trainee by telephone two months after the training session to see "how it was going out there" and to find out if anything from the training session had been particularly useful. Participants were expected to review handout materials as needed after training.

## Summary

By using formative evaluation techniques, training designers can ensure that training is effective. Using four levels of summative evaluation lets trainers determine whether or not the training was a good return on investment for the company. Once they can prove that, they become more valued in their organizations. Learning transfer systems help participants use what they learn in the classroom on the job. The better trainers can help participants transfer learning, the more likely it will be that the training will have an impact on the job.

# CHAPTER 7

# SUMMARY AND RECOMMENDATIONS

## Introduction

In this chapter, the designer will summarize the project in its entirety, draw conclusions and make recommendations. Each project that designers produce is a learning experience. The designer will discuss what she has learned in creating this project.

## Methods and Procedures Used

The designer followed the ISD model as developed by Florida State University (1976) to develop a training session for Spectrum Healthcare Solutions. The designer faced the task of training sales representatives about a high-technology product. Additionally, the designer had the challenge of having no trainers, but relying solely on the company subject-matter experts to develop and deliver the training.

### Analysis

One of the most successful elements of this training was the use of various means of analysis. The needs analysis served both to determine the need for training and also to involve sales managers in the process. The course entry survey of the participants served to solidify the objectives for this particular audience and also gained the involvement of the participants (one of Broad's strategies for learning transfer).

### Design

With just a little guidance from the designer, the subject-matter experts essentially designed the program. They are the ones who outlined the objectives and designed the learning activities. In this way, they were heavily involved right from the beginning and took ownership for the outcome of the program.

### Development

The SMEs located or developed most of their own training materials. The designer verified accuracy and assisted in updating and reproducing learning material. Again, this gave ownership to the subject matter experts. The designer developed and produced evaluation material and the other supplementary material contained in this project.

### Implementation

The training was conducted on April 30 through May 2, 1991 at Spectrum Healthcare Solutions in Hauppauge, New York. It was attended by thirty-five sales representatives twenty from Spectrum and fifteen from Spectrum's business partner, IBM. The project included a variety of media, including transparencies, slides, and live demonstration of the software. Most of the instructors created their own training media.

### Evaluation

Extensive analysis was used to determine the needs of the audience prior to training taking place. In this way, the designer hoped to customize the training to best suit the audience. The summative evaluations indicate that this was accomplished. The designer regrets not being able to provide learning evaluation data. This is a drawback of being at the mercy of subject matter experts. Since the designer did not have the subject expertise to design test questions, she had no recourse when the SMEs declined to provide them to her.

## Conclusions

In past projects, the designer had usually been the subject-matter expert as well. In this way she had total control of every facet of the training. During this project, the designer gave up some control of the project by relying on subject-matter experts to create their own portion of the training. This proved to be frustrating at times. Because the SMEs worked to create the course outline at the very beginning of the analysis phase, they were more aligned with the course objectives. The designer had a difficult time keeping to the project plan that she had created since the SMEs had different priorities. The designer would have liked to conduct a pilot test of the project, but was not able to round up the SMEs.

One of the planned activities that the designer was not able to accomplish was conducting a train-the-trainer course for the SME instructors. This was not accomplished again due to the conflicting priorities of the SMEs.

## Recommendations

The designer admits that she could have done a few things differently in developing this project. She might have insisted on conducting a small group trial and creating a pre and post test. Looking back, it appears that she might have been a bit more assertive in managing the SMEs. The designer would make the following recommendations to anyone faced with working with SMEs as instructors.

1. SMEs who are going to be instructors should be trained as trainers. It is especially important that they learn interactive training techniques.

2. Work with the SMEs early in the project to create the course objectives. In this way, the SMEs will understand the broad perspective of the training and will not get

sidetracked. It may be necessary to keep referring back to the course objectives when SMEs are developing instruction. This was one of the things in this project that worked extremely well.

3. Be assertive in managing the project. Give reasonable but firm deadlines for having materials ready and stick to them.

4. Explain the steps in the development process early on in the project. The SMEs should have a clear understanding of why such things as learning evaluations and group trials are important.

5. Share ownership for the success of the training. Thank the SMEs in front of the participants and their managers. Send thank you notes after training indicating how their participation made the training successful. You never know when you will need the SMEs again!

## Concluding Statement

This project taught me a great deal. One of the most valuable lessons I learned from working with SMEs is that sometimes its necessary and even okay to relinquish control. I was frustrated and worried that the SMEs were not meeting my schedule, that they were going to stand up in front of MY training room and lecture, that the trainees would get bored and walk out.

In fact, the SMEs conducted the training pretty well. Because they had been involved from the beginning in designing the course, they related to the trainees exactly what they needed to know. One of the key instructors was also a member of the salesforce and was extremely credible in relating his experiences to the audience.

Having a receptive audience also helped. The sales representatives were begging for this information because it could help them make commissions. They were involved and participative with very little effort on the part of the instructors. By using extensive up-front analysis, we were able to deliver a course that might not have been the slickest or the most dynamic, but nevertheless was relevant to the needs of the sales representatives. If the information is relevant, if the trainees need it, then you'll have a successful program, even if your trainers are not as polished as you might be if you were conducting training. The important thing is to give the learners the information they need.

# APPENDIX A

## WIN/LOSS SUMMARY

**SPECTRUM**
HEALTHCARE SOLUTIONS
A PARTNERSHIP OF IBM AND BAXTER SUBSIDIARIES

**Interoffice Memorandum · For Internal Use Only**

**To:** Enid Crystal

**Date:** February 26, 1991

**From:** Marlon J. Ketani

SUBJECT: REQUEST FOR WIN/LOSS DATA

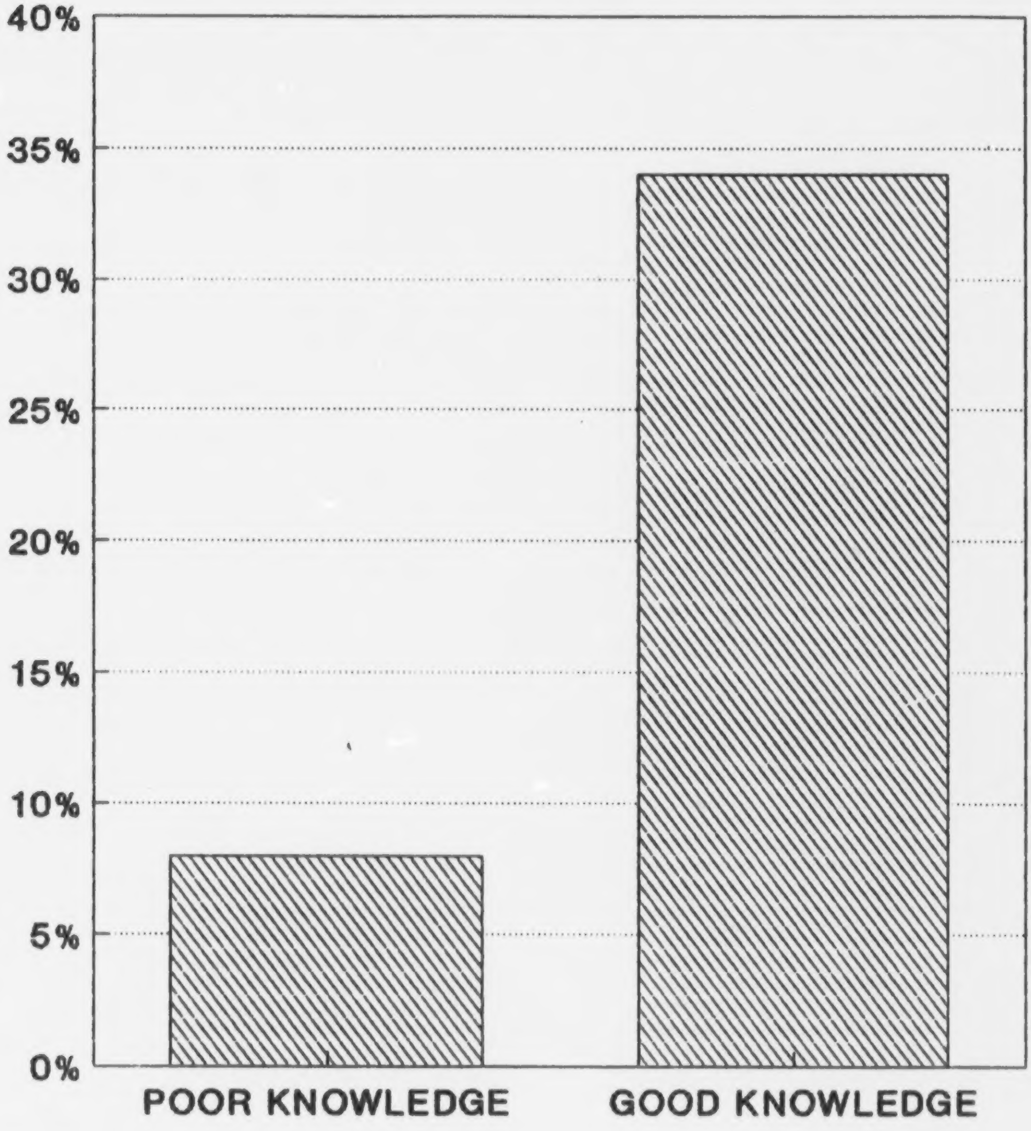
Attached is win/loss data on hospital ratings for Spectrum's product knowledge during the sales cycle. The first graph shows that our win rate for 1990 was 34% when our product knowledge was rated well but only 8% when our product knowledge was rated poor. The second graph shows that our product knowledge improved consistently over the year, improving the most in the 4th quarter. The third graph shows that product knowledge was rated low in 20% of our losses in 1990.

These statistics support the view that product knowledge is an important factor in winning deals and that training programs implemented during the year had a significant positive effect on the product knowledge of our sales force.

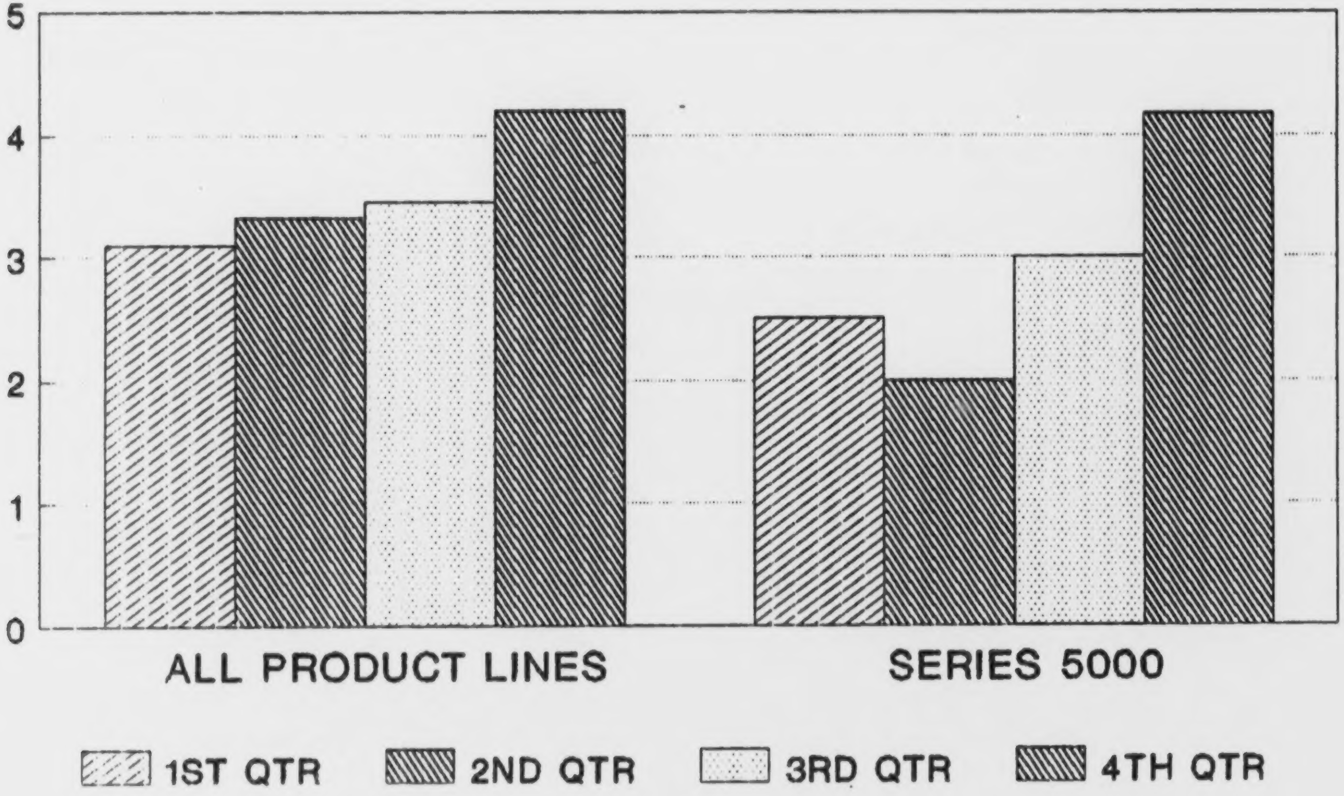
cc: G. Kiser
F. Martin

# WIN RATES WHEN PRODUCT KNOWLEDGE WAS LOW/HIGH

## 1990

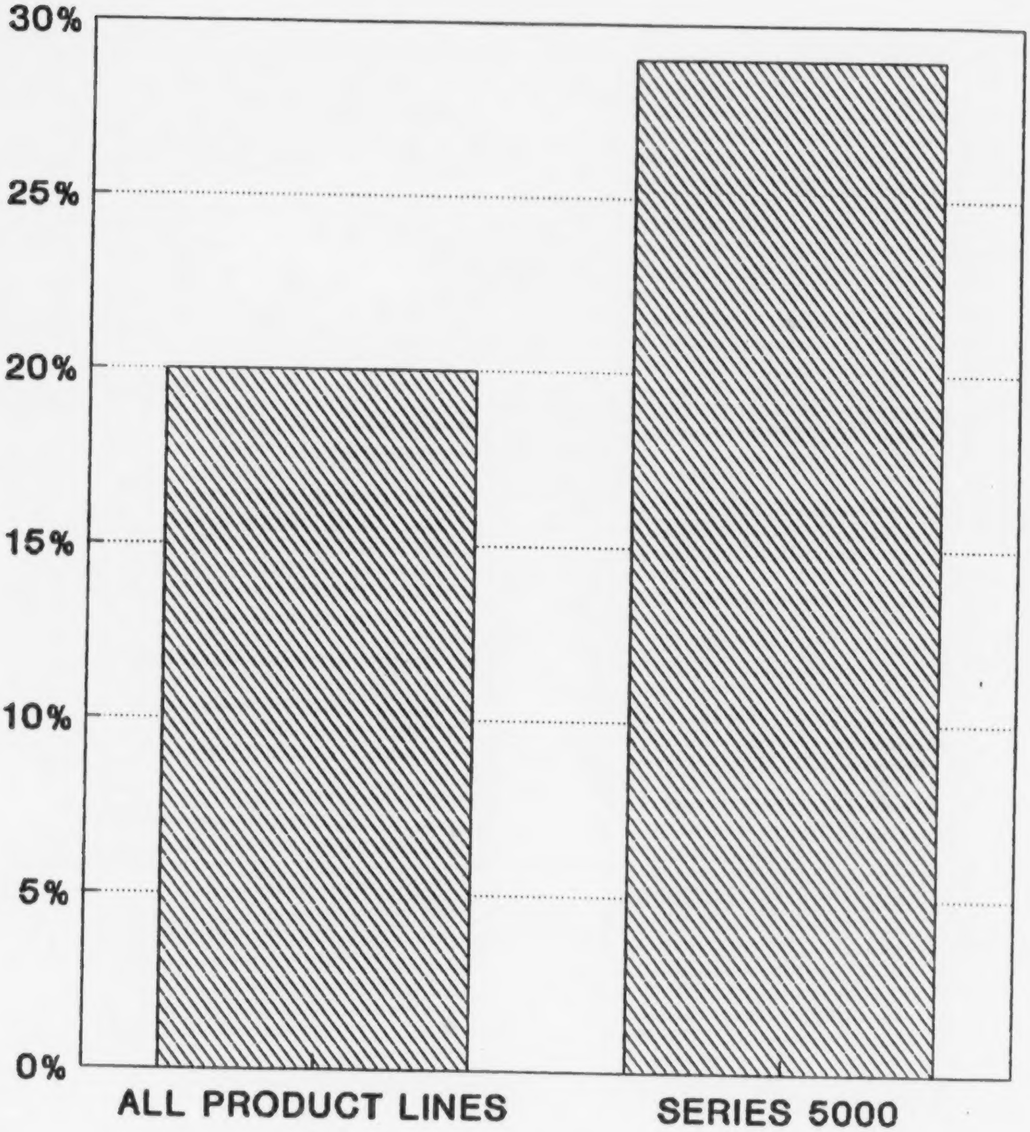


# HOSPITAL'S RATING OF SPECTRUM'S PRODUCT KNOWLEDGE FOR 1990



SCALE OF 1-5, 1-POOR, 5-EXCELLENT

# % OF LOSSES RATED LOW FOR PRODUCT KNOWLEDGE
## 1990



## WIN RATES WHEN SPECTRUM'S PRODUCT KNOWLEDGE WAS RATED LOW/HIGH

| PRODUCT KNOWLEDGE RATING | 1ST QTR | 2ND QTR | 3RD QTR | 4TH QTR | ALL OF 1990 |
|---|---|---|---|---|---|
| LOW (RATING OF 1 OR 2) | 14% | 0% | 0% | n/a | 8% |
| HIGH (RATING OF 4 OR 5) | 40% | 29% | 17% | 39% | 34% |

RATINGS ARE FROM 1-5, 1 = POOR AND 5 = EXCELLENT.

## HOSPITAL'S RATING OF SPECTRUM'S PRODUCT KNOWLEDGE FOR 1990

| | 1ST QTR | 2ND QTR | 3RD QTR | 4TH QTR | ALL OF 1990 |
|---|---|---|---|---|---|
| ALL PRODUCT LINES | 3.09 (22) | 3.32 (19) | 3.45 (11) | 4.20 (20) | 3.51 (72) |
| SERIES 5000 ONLY | 2.50 (4) | 2.00 (1) | 3.00 (1) | 4.17 (6) | 3.33 (12) |

RATINGS ARE FROM 1-5; 1=POOR, 5=EXCELLENT

## % OF LOSSES WHERE SPECTRUM RATED LOW FOR PRODUCT KNOWLEDGE

| | 1ST QTR | 2ND QTR | 3RD QTR | 4TH QTR | ALL OF 1990 |
|---|---|---|---|---|---|
| ALL PRODUCT LINES | 35% | 19% | 20% | 0% | 20% |
| SERIES 5000 ONLY | 33% | n/a | n/a | 0% | 29% |

RATINGS ARE FROM 1-5, 1 = POOR AND 5 = EXCELLENT.
A LOW RATING IS DEFINED AS A 1 OR 2.

# APPENDIX B

## SALES REPRESENTATIVES JOB DESCRIPTIONS

## SPECTRUM HEALTHCARE SOLUTIONS

## POSITION DESCRIPTION

**JOB TITLE:** Sales Representative **DEPARTMENT:** Sales

**REPORTS TO:** Manager-Sales **DATE WRITTEN:** 4/90

**LOCATION:** Any

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

### BASIC FUNCTION/NATURE AND SCOPE:

Assists management in creating and executing a plan that will result in attainment of personal quota, cover territory and close business in the most efficient manner, identify deal-breakers as early as possible in the sales cycle as part of the qualification process, and accurately forecast vertical and new accounts, enhance knowledge in both selling skills, products and industry awareness, become familiar with assigned territory intimately so as to take advantage of all opportunities.

### PRINCIPLE ACCOUNTABILITIES:

1. Responsible for meeting with management bi-weekly for both guidance and assistance in tracking the management of new territory.

2. Conducting grand tours on alternating months to existing clients to identify and qualify for vertical business and to prepare for site visits. Utilize the tours to have vertical matrix updated by end of second quarter.

3. Maintain up-to-date status and utilize effectively the necessary paperwork (Account Profiles, SARs, etc.).

4. Continue to build positive relationships within the company that will help with marketing efforts (i.e., Services, contract administration, support, etc.).

5. Schedule trips as efficiently as possible. Accomplish as much as possible with as many clients as possible on ech trip.

6. Responsible for keeping all expenses to a minimum, i.e., entertainment, hotels, flights, etc. Responsible for qualifying accounts over the phone and try to make personal visits only when necessary.

7. Focus on long-term sell relationships in an effort to position for future business.

8. Meet with management bi-weekly to address and resolve troublesome issues.

9. Responsible for accounts follow-up on a weekly or bi-weekly basis to ascertain any changes that could affect forecast.

10. Work closely with management for guidance in forecasting.

11. Strategize bi-weekly with management for direction and guidance on accounts.

12. Attend internal classes, such as Time Management, Negotiations Skills, etc. to increase sales skills.

13. Responsible for obtaining more knowledge during demos.

14. Identify and meet as many consultants who work the area as possible and cultivate a positive relationship.

15. Work closely with IBM reps in the territory.

16. Responsible for making "cold calls" with the goal of being in contact with all hospitals.

## REQUIREMENTS/QUALIFICATIONS

- EDUCATION/CREDENTIALS

- PRIOR EXPERIENCE

o **SKILLS/KNOWLEDGE**

Ability to interact effectively and professionally with all levels of client staff and management.

Excellent oral and written communication.

In-depth knowledge of hospital/healthcare environment.

APPROVALS:

POSITION'S SUPERVISOR/MANAGER

HUMAN RESOURCES

## SPECTRUM HEALTHCARE SOLUTIONS

## POSITION DESCRIPTION

**JOB TITLE:** Sr. Sales Representative **DEPARTMENT:** Sales

**REPORTS TO:** Manager-Sales **DATE WRITTEN:** 4/90

**LOCATION:** Any

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

### BASIC FUNCTION/NATURE AND SCOPE:

Work to achieve or exceed quota objectives for new sales, verticals and backlog revenue in the State of Florida, become extremely knowledgeable of assigned territory for each respective product market maintaining a continually updated 12-month prospect analysis, develop IBM relationships at the branch, Solution Center and health industry levels to best utilize the marketing resources available, enhance industry/product knowledge and overall professional skills, report all documents, forms, reports, and administration requests accurately and in a timely manner.

### PRINCIPLE ACCOUNTABILITIES:

1. Utilize territory management skills to capitalize on qualified business opportunities.

2. Assist the Services organization in meeting customer expectations and billing outstanding backlog revenue dollars.

3. Build relationships with Florida client base to identify and close qualified vertical opportunities.

4. Work closely with appropriate personnel to identify and qualify accounts in Florida.

5. Maintain detailed territory book tracking and updating each account status. Updates will be made at least quarterly for each account.

6. Responsible for being involved in industry gatherings (i.e., HFMA, conventions, user group meetings, etc.). Utilize gatherings as a pre-arranged sales event for appropriate client or prospect hospitals.

7. Responsible for meeting with responsible IBM branch offices to educate them on Spectrum's direction and product, gain a mutual understanding of how Spectrum can best work together with IBM, and develop individual territory strategies by branch office and account.

8. Meet with solution center representative at least bi-monthly to discuss current account activity and plan upcoming events.

9. Responsible for mass mailing announcement and territory information to individual IBM reps and branch offices to use as marketing tools in their efforts to continue developing prospect accounts, i.e., Series 3000/RS 6000 platform, Dorenfest Data Base.

10. Responsible for working with Spectrum product specialists, at the detail level, to understand customer needs and how our products will satisfy those needs.

11. Work with IBM specialists to better understand how complimentary IBM offerings can meet the customer's objectives as part of the sales cycle.

12. Participate in advanced skills training programs offered through Baxter of IBM (i.e., Quality Leadership Program).

13. Responsible for working with manager to understand our administration goals.

14. Maintain up-to-date and accurate data files.

15. Maintain accurate and timely expense reports in order to track budget performance and meet goals.

**REQUIREMENTS/QUALIFICATIONS**

o **EDUCATION/CREDENTIALS**

o **PRIOR EXPERIENCE**

- **SKILLS/KNOWLEDGE**

  Ability to interact effectively and professionally with all levels of client staff and management.

  Excellent oral and written communication.

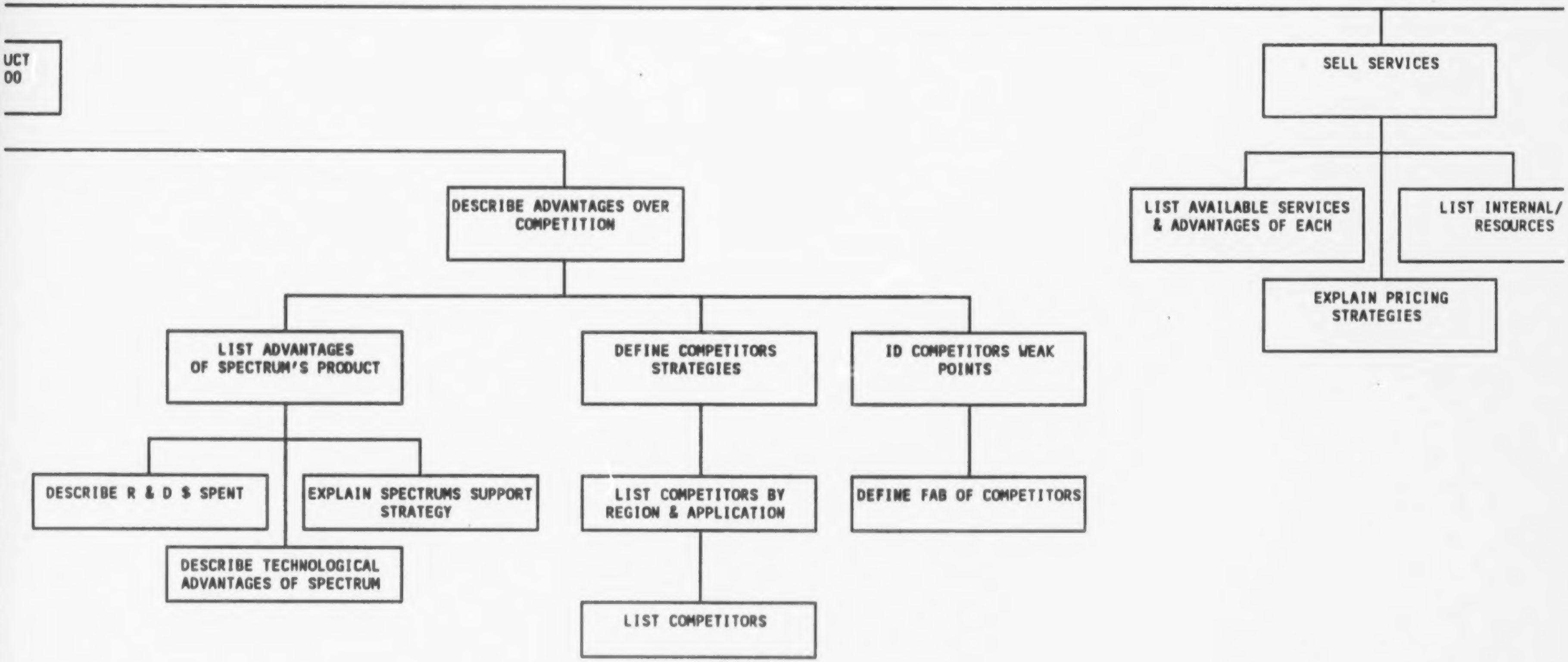
  In-depth knowledge of hospital/healthcare environment.

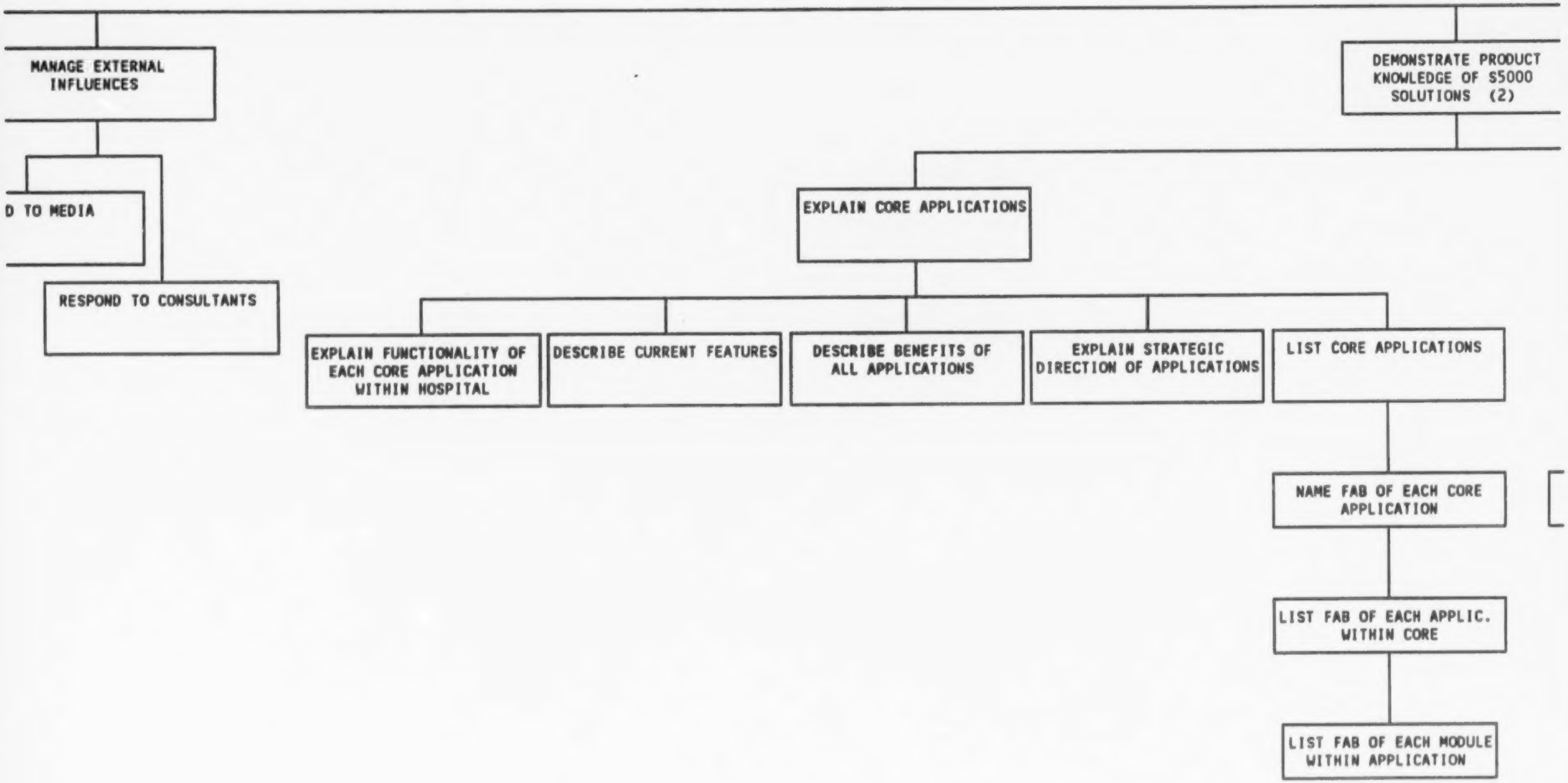
APPROVALS:

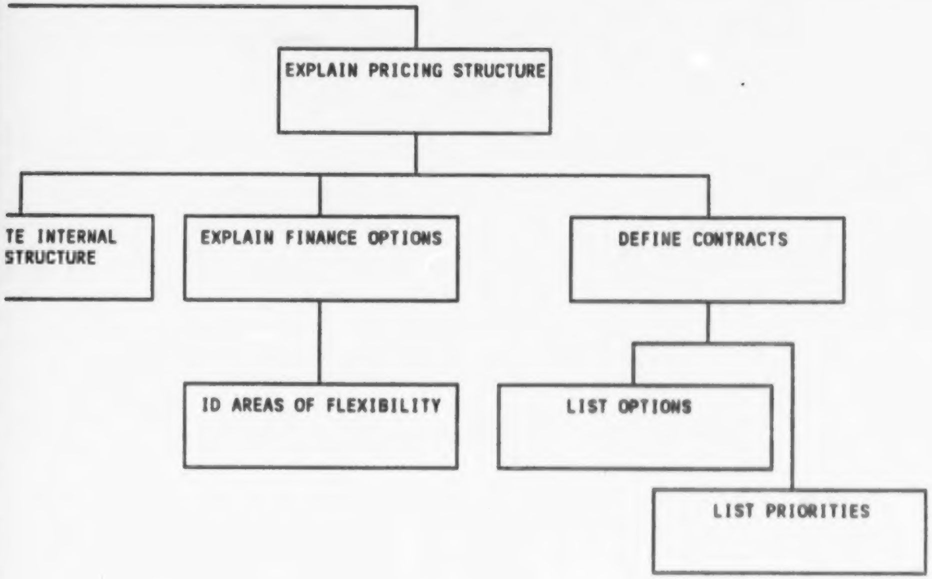
| | |
|---|---|
| POSITION'S SUPERVISOR/MANAGER | HUMAN RESOURCES |

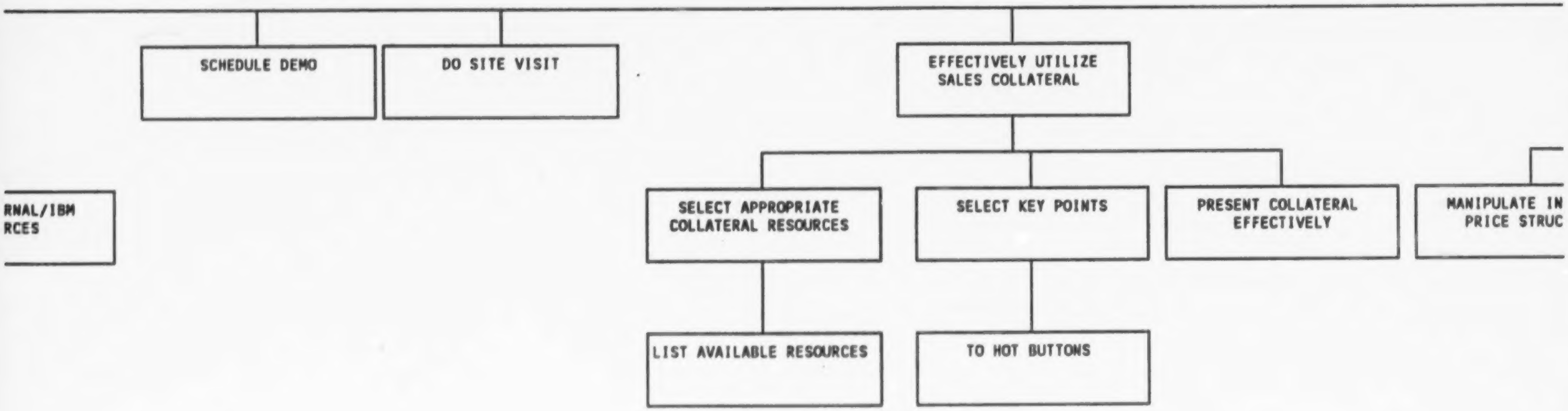
# APPENDIX C

# COURSE MAP


UCT
00
SELL SERVICES
DESCRIBE ADVANTAGES OVER COMPETITION
LIST AVAILABLE SERVICES & ADVANTAGES OF EACH
LIST INTERNAL/ RESOURCES
EXPLAIN PRICING STRATEGIES
LIST ADVANTAGES OF SPECTRUM'S PRODUCT
DEFINE COMPETITORS STRATEGIES
ID COMPETITORS WEAK POINTS
DESCRIBE R & D $ SPENT
EXPLAIN SPECTRUMS SUPPORT STRATEGY
LIST COMPETITORS BY REGION & APPLICATION
DEFINE FAB OF COMPETITORS
DESCRIBE TECHNOLOGICAL ADVANTAGES OF SPECTRUM
LIST COMPETITORS


MANAGE EXTERNAL INFLUENCES
D TO MEDIA
RESPOND TO CONSULTANTS
DEMONSTRATE PRODUCT KNOWLEDGE OF S5000 SOLUTIONS (2)
EXPLAIN CORE APPLICATIONS
EXPLAIN FUNCTIONALITY OF EACH CORE APPLICATION WITHIN HOSPITAL
DESCRIBE CURRENT FEATURES
DESCRIBE BENEFITS OF ALL APPLICATIONS
EXPLAIN STRATEGIC DIRECTION OF APPLICATIONS
LIST CORE APPLICATIONS
NAME FAB OF EACH CORE APPLICATION
LIST FAB OF EACH APPLIC. WITHIN CORE
LIST FAB OF EACH MODULE WITHIN APPLICATION

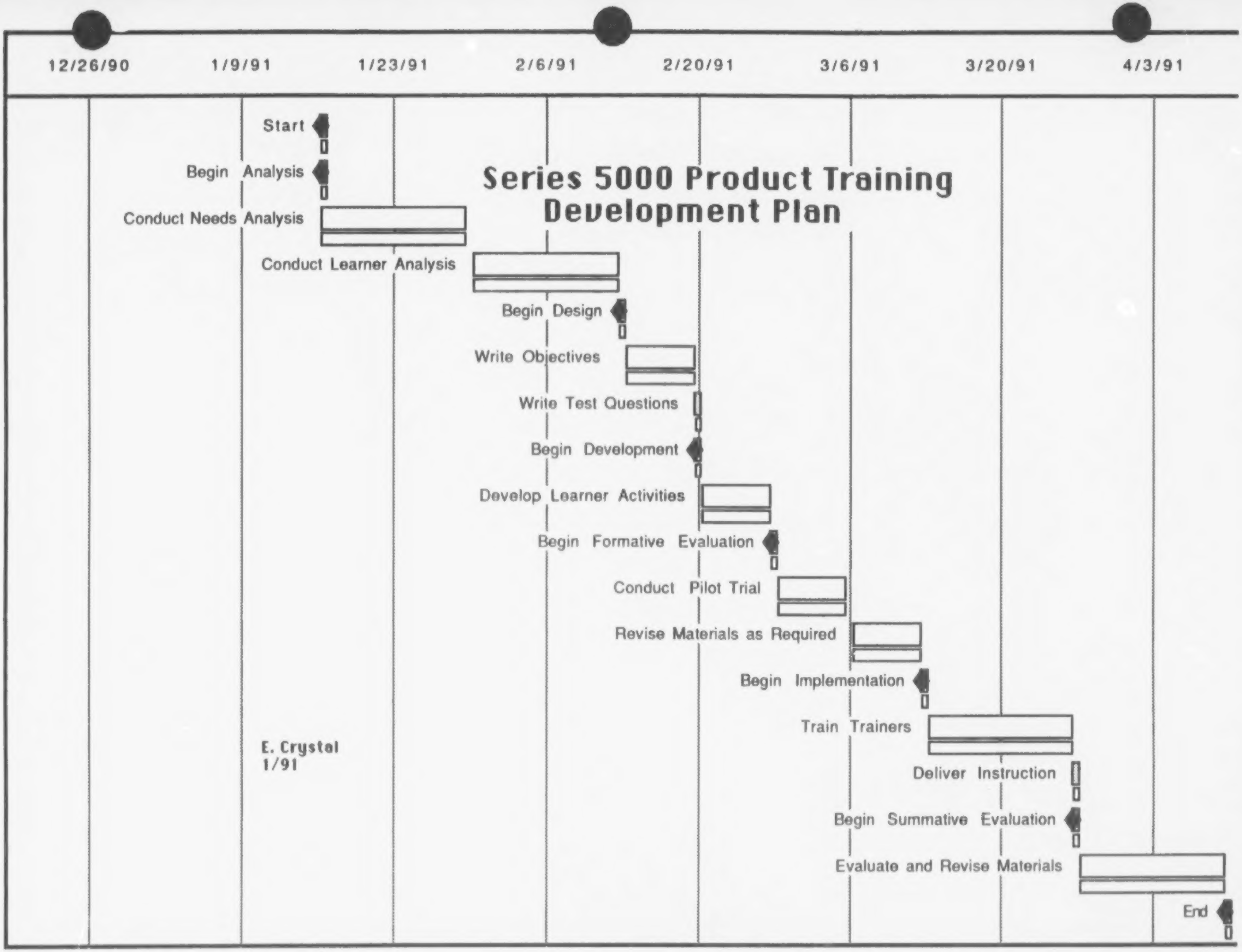

EXPLAIN PRICING STRUCTURE
TE INTERNAL STRUCTURE
EXPLAIN FINANCE OPTIONS
DEFINE CONTRACTS
ID AREAS OF FLEXIBILITY
LIST OPTIONS
LIST PRIORITIES


RNAL/IBM
RCES
SCHEDULE DEMO
DO SITE VISIT
EFFECTIVELY UTILIZE SALES COLLATERAL
SELECT APPROPRIATE COLLATERAL RESOURCES
SELECT KEY POINTS
PRESENT COLLATERAL EFFECTIVELY
MANIPULATE IN
PRICE STRUC
LIST AVAILABLE RESOURCES
TO HOT BUTTONS

# APPENDIX D

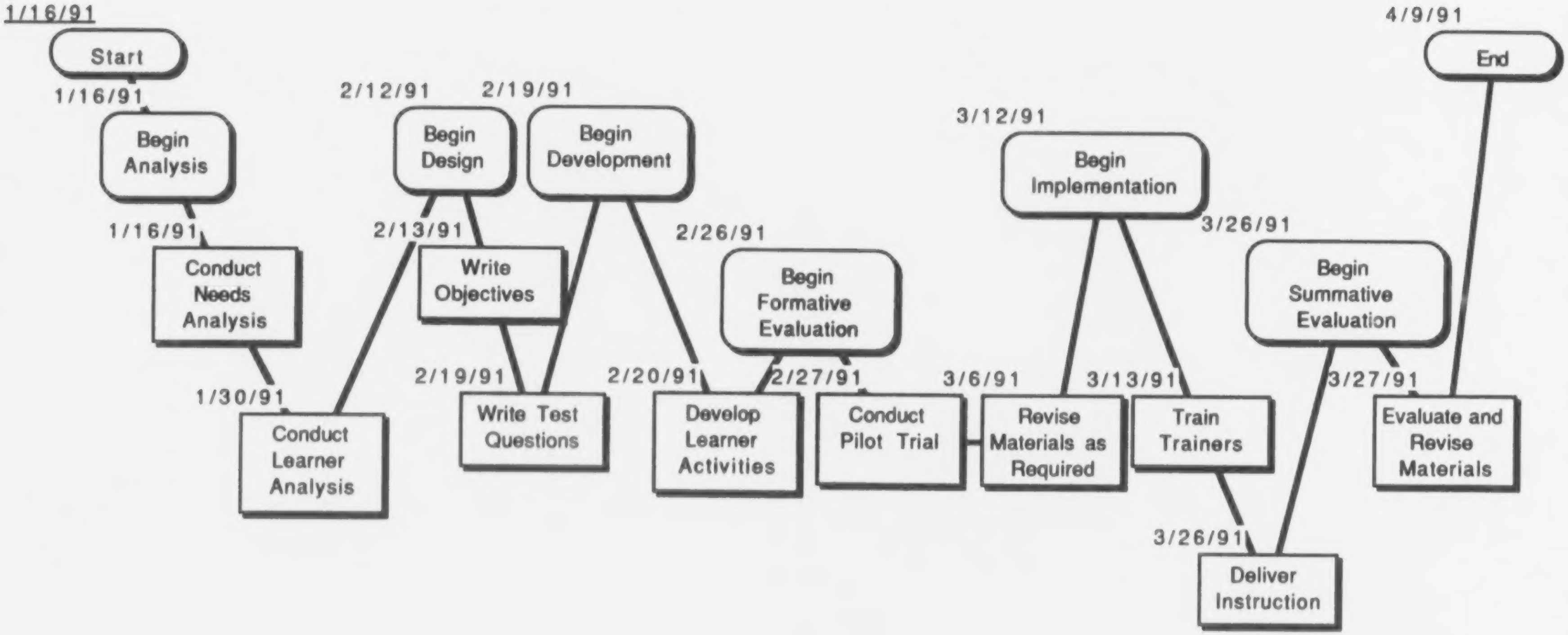
## PROJECT PLAN

# Series 5000 Product Training Development Plan



E. Crystal
1/91

# Series 5000 Product Training Development Plan



1/16/91
Start

1/16/91
Begin Analysis

1/16/91
Conduct Needs Analysis

1/30/91
Conduct Learner Analysis

2/12/91
Begin Design

2/13/91
Write Objectives

2/19/91
Write Test Questions

2/19/91
Begin Development

2/20/91
Develop Learner Activities

2/26/91
Begin Formative Evaluation

2/27/91
Conduct Pilot Trial

3/6/91
Revise Materials as Required

3/12/91
Begin Implementation

3/13/91
Train Trainers

3/26/91
Deliver Instruction

3/26/91
Begin Summative Evaluation

3/27/91
Evaluate and Revise Materials

4/9/91
End

E. Crystal
1/91

## APPENDIX E

## TASK OUTLINE

**TERMINAL OBJECTIVE:**
**Demonstrate product knowledge of S5000 Solutions**

Enabling objectives:

1. Explain core Applications:

    1.1 List Core Applications
        Financial Core
            List Applications within Financial Core
            Registration/Admission
            Patient Accounting
            1.5.1.1 List Modules within each application
            1.5.1.2 Describe Features of each module
            1.5.1.3 Describe Advantages of each module
            1.5.1.4 Describe Benefits of each module
            1.5.1.5 Explain operating environment
        1.5.2 Describe Features of each application
        1.5.3 Describe Advantages of each application
        1.5.4 Describe Benefits of each application

        Clinical Core
            List Applications within Clinical Core
            1.5.1.1 List Modules within each application
            1.5.1.2 Describe Features of each module
            1.5.1.3 Describe Advantages of each module
            1.5.1.4 Describe Benefits of each module
            1.5.1.5 Explain operating environment
        1.5.2 Describe Features of each application
        1.5.3 Describe Advantages of each application
        1.5.4 Describe Benefits of each application

        Medical Records Core
            List Applications within Medical Records core
            1.5.1.1 List Modules within each application
            1.5.1.2 Describe Features of each module
            1.5.1.3 Describe Advantages of each module
            1.5.1.4 Describe Benefits of each module
            1.5.1.5 Explain operating environment
        1.5.2 Describe Features of each application
        1.5.3 Describe Advantages of each application
        1.5.4 Describe Benefits of each application

- Departmental Systems
  - List Applications within Departmental Systems
  - 1.5.1.1 List Modules within each application
  - 1.5.1.2 Describe Features of each module
  - 1.5.1.3 Describe Advantages of each module
  - 1.5.1.4 Describe Benefits of each module
  - 1.5.1.5 Explain operating environment
- 1.5.2 Describe Features of each application
- 1.5.3 Describe Advantages of each application
- 1.5.4 Describe Benefits of each application

- Appointment Scheduling
  - List Applications within Appointment Scheduling
  - 1.5.1.1 List Modules within each application
  - 1.5.1.2 Describe Features of each module
  - 1.5.1.3 Describe Advantages of each module
  - 1.5.1.4 Describe Benefits of each module
  - 1.5.1.5 Explain operating environment
- 1.5.2 Describe Features of each application
- 1.5.3 Describe Advantages of each application
- 1.5.4 Describe Benefits of each application

- 1.2 Explain functionality of Each Core Application within hospital
- 1.3 Describe current features of each core application
- 1.4 Describe benefits to hospital/dept of each core application
- 1.5 Explain strategic directions of each core application

2. Describe Advantages over competition
   - 2.1 List Advantage of Spectrum's product
   - 2.2 Describe R & D dollars spent
   - 2.3 Describe technological advantage of Spectrum
   - 2.4 Explain Spectrum's support strategy
   - 2.5 Define competitors' strategies
   - 2.6 List competitors by regions and application
     - 2.6.1 List competitors
     - 2.6.2 List regions
   - 2.7 Identify competitors weak points
   - 2.8 Define Features, advantages, benefits of competitors' products

3. Effectively utilize sales collateral
   - 3.1 Select Appropriate Collateral Resources
     - 3.1.1 List available resources
   - 3.2 Select Key points important to client

4. Explain pricing structure
    4.1 Manipulate internal price structure
    4.2 Explain finance opitons
        4.2.1 Identify areas of flexibility

5. Define contract
    5.1 List priorities
    5.2 List options

# APPENDIX F

# COURSE OUTLINE

**GOAL: Given a potential customer and appropriate sales collateral, demonstrate product knowledge of S5000 Solutions**

| | SME | INST |
|---|---|---|
| OVERVIEW/ROADMAP OF S5000 PRODUCT | V. Spicer | V. Spicer |
| Current install base | | |
| Pipeline | | |
| History? | | |
| Key people to know (resource list) | | |

I. Explain operating environment - High Level K. Wank Wank

Hardware

Operating System

Architecture

ADS Plus

Other???

## II. Explain core Applications:

Explain functionality of Each Core Application within hospital

Describe current features of each core application

Describe benefits to hospital/dept of each core application

Explain strategic directions of each core application

Explain install methodology

### A. Financial Core

J. Caracciolo

Overview - FFB

1. Registration/Admission

   FFB

2. Patient Accounting

   FFB

B. Clinical Core V. Spicer

1. Modules

    Order Entry/Ancillary Response

    On-Line Charting

    Discharge Planning

    Care Planning

C. Medical Records Core inc. w. Financial Core

    MEDICAL RECORDS MGMT

    FFB

D. Departmental Systems overview - handout

    RIM

    Pharmacy Management System

    Operating Room

    Appointment Scheduling V. Spicer/J. Caracciolo

    Materials Management System

    Adverse Drug Reaction

    General Ledger

    Accounts Payable

## F. OTHER CORE APPLICATIONS?????

## G. THIRD PARTY PRODUCTS?????

Health Systems International

CDE, QAS,CSI, ACDE. DRGS, NEW YORK GROUPER

Global Software, Inc.

AP, GL, COST ACCTINGS, FIXED ASSETS, GLOBAL VIEW

Healthcare Knowledge Systems

- ACCUCODE II

Pansophic

- EASYTRIEVE PLUS

## II. Describe Advantages over competition

2.1 List Advantage of Spectrum's product

2.2 Describe R & D dollars spent

2.3 Describe technological advantage of Spectrum

2.4 Explain Spectrum's support strategy

2.5 Define competitors' strategies

2.6 List competitors by regions and application

  2.6.1 List competitors

  2.6.2 List regions

2.7 Identify competitors weak points

2.8 Define Features, advantages, benefits of competitors' products

III. Effectively utilize sales collateral

  3.1 Select Appropriate Collateral Resources

    3.1.1 List available resources

    3.1.2 Select Key points important to client

IV. EXPLAIN SERVICES & SUPPORT:

  Education

  Consulting Services

  Technical Services

  System Support

  Data Conversion

  Documentation

V. Explain pricing structure

  4.1 Manipulate internal price structure

  4.2 Explain finance options

    4.2.1 Identify areas of flexibility

VI. Define contract

  5.1 List priorities

  5.2 List options

# APPENDIX G

# SUBJECT EXPERT LOCATOR

# RESOURCE CHART
## SERIES 5000 LEVEL 1 TRAINING SESSION
April 30 - May 2, 1991

| TIME TO TRAIN | TOPIC | SUBJECT EXPERT/ SOURCE | INSTRUCTOR | COMMENTS |
|---|---|---|---|---|
| 45 min | Overview of product - history | Slides - marketing Product slides & Exec. overview slides | SH | Salespeople need to be taught to use these slides by their mgrs |
| 15 min | Current install Base | VS is developing a listing | handout? VS | |
| 15 min | Pipeline | Finance | handout - EC | explain what is important re: pipeline |
| 15 min | Key people to know in S5000 | Marketing | handout - EC | |
| 30 min | Operating environment<br>Hardware<br>Operating Syst.<br>Architecture<br>ADS Plus | KW is developing slides & script | SH | Scot can show how to use these tools |
| 1.5 hr | Financial Core Features, Functions, Benefits | JC | JC | |
| 1.5 hr | Clinical Core Features, Functions, Benefits, and Future Direction | VS<br>EC | VS | New release FFB included |
| 30 min | Medical Records Core | | | |

| TIME TO TRAIN | TOPIC | SUBJECT EXPERT/ SOURCE | INSTRUCTOR | COMMENTS |
|---|---|---|---|---|
| 30 min | Departmental systems<br>RIM<br>Operating Rm<br>Appointment Scheduling | PW<br>JC (Appt. Sched) | JC or VS will cover appoint. scheduling | RIM will be covered in a separate class<br>Suika needs to cover RIM & Pharm. Mgmt. strategies |
| 20 min. | 3rd Party Products | Marketing | Global? | May just need a handout |
| 20 min. | Competitive Advantages | MK | ? | handout - Dornfest |
| 10 min. | Effectively utilize sales collateral | Marketing - list of existing collateral | SH | May need handout describing collateral available |
| 45 min | Explain services and support | FOPs | BG?<br>MD | There are slides available to explain this |
| 30 min | Explain pricing structure | FM - other price committee person (JK) | FM | Pricing committee info (how do we arrive at prices) |
| 30 min. | Define contract | FM | FM & RP | |
| 1 hr | Competitors by product - point by point specific | VS/ marketing/ MK | VS | not currently available |
| .5 hr | Strategic Direction of S5000 | Product mgmt. | WS | |
| .5 hr | Technological Advantages of Spectrum | TM | Product mgmt is developing slides | |

# APPENDIX H

## COURSE MATERIAL

# HISTORY OF SERIES 5000

| | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| COMPANY | PCI formed | | Travenol THIS formed | | SBS acquired by Travenol | Travenol acquires Compucare/ PCI | Travenol Δ's to Baxter | | | IBM/Baxter announce 50/50 joint venture | Spectrum becomes operational |
| | | | SBS formed | | | SBS + PCI merge to become IHT | | T.H.I.S. Δ's to BSD | | Annson and OR acquired | |
| | | | | | | Travenol acquires AHS | | Omega Product Line | | Series 5000 Product Line | |
| PRODUCTS | (PCI) | ADT Univ. of Cin. | | PMAS | | PMAS- maint. mode | PMAS marketed | Integrated w/PMAS Δ'd to APT | | Fin Core<br>Med Recs Clinical Core | META (ADS) acquired |
| | | | PAS at Univ. of Cin. | Orders Management | Abstracting developed | UR developed | RSVP acquired | | | Appt. Sched. RIM acquired PM/PA supported | |
| | | | | | | 3C's developed at IU → | | Med Records= 3C's Abstracting UR | Pharmacy acquired (PDM) → | Pharmacy Integrated w/PMAS & CCS → | Rx Release 8.0 |
| | | | | (SBS) | Enhanced PM/PA | | Enhanced PM/PA dropped | | | Annson<br>- DOMS →<br>- Link<br>- Exchange | Physician Series |
| | | | | | NCS → | Becomes → | CCS | | | OR Star → | OR System |

# Spectrum Healthcare Solutions Evolution

| | |
|---|---|
| 1974 | Dynamic Control Company Formed (S/38 HIS) |
| 1978 | J.S. Data Company Formed (S/34 HIS) |
| 1983 | Baxter Acquires Dynamic Control |
| 1983 | Baxter Acquires Stony Brook Systems |
| 1984 | Baxter Acquires J.S. Data |
| 1985 | Baxter Acquires Compucare (DG-Based HIS) |
| 1985 | American Hospital Acquires Annson Systems |
| 1986 | Baxter Acquired American Hospital Supply |
| 1988 | Baxter Sold Compucare Division |
| 1989 | Baxter and IBM form Spectrum Healthcare Solutions |

# IBM in Health Care Evolution

| | |
|---|---|
| 1967 | Medical Information System Programs (MISP) |
| 1968 | Shared Hospital Accounting System (SHAS) |
| 1972 | Health Care Support/Accounting Licensed Program (HCS/Accounting) |
| 1975 | Duke University Develops HCS/DL/1/Patient Care System |
| 1977 | HCS/DL/1/Patient Care System Announced as an IBM Installed User Program (HCS-PCS) |
| 1978 | DOS/VS Version of HCS-PCS Created by Good Samaritan in Cincinnati Announced as Installed User Program |
| 1979 | Installed User Programs:<br>PCS-Edit -- Sisters of Charity, Houston<br>PCS-Data Manager -- Cedars-Sinai Medical Center |
| 1981 | IBM Announced PCS-Application Development System as an IUP-Extended Support |
| 1981 | PCS-Infection Data Management (University of Iowa) |
| 1982 | PCS-Nursing Care Plans (Stony Brook) |
| 1982 | PCS-Patient Management Replaces HCS/DL/1 |
| 1983 | PCS-Surgery Reporting (University of Iowa) |
| 1984 | PCS-Patient Accounting -- Licensed Program |
| 1986 | PCS-Medical Records and Concurrent Review Program Offering |
| 1986 | PCS-ORDERS, PCS-ADS and PCS-PM Licensed Programs |
| 1988 | PCS-Radiology Information Management Licensed Program |
| 1989 | IBM and Baxter form Spectrum Healthcare Solutions |

## Evolution of PCS

To interpret the various ways the term "PCS" is used in today's environment, it is necessary to understand the history and evolution of the current family of PCS products. This information also aids in evaluating the positioning of current PCS customers for future PCS offerings. Finally, in order to assist current customers and to interpret references correctly for potential customers, marketing personnel should be able to identify the different versions of PCS and its predecessor products and their usage in each account.

IBM has provided packaged application solutions for health care applications for over 25 years. Although PCS had its origins in other products, it has evolved over the years into a family of products that provides the functions required for today's hospital information system.

Hospital information systems have existed in some form since the 1960's, mostly oriented toward financial management rather than toward patient care. Because of the high cost of technology, hospital information systems for patient care applications were not practical.

In 1967, IBM offered the Medical Information System Programs (MISP), which provided an online environment for a hospital information system, a data base design, utility programs, and subroutines. This package allowed some customers to "pioneer" the development of hospital information systems.

In 1968 IBM made available the Shared Hospital Accounting System (SHAS). It was the predecessor to licensed program HCS/Accounting, which was delivered in 1972. Both performed patient billing, accounts receivable, and general ledger functions. These were sophisticated offerings for their time, being able to support multiple institutions on one system, and were widely accepted. These systems are still in use today in many hospitals and form the basis of patient accounting systems offered by other vendors.

In the early 1970's, IBM marketed the Health Care Support (HCS) family of products to the intermediate and large medical institutions. These were online, standalone departmental applications. In the mid-70's, these packages were redesigned and rewritten in order to use DL/1, the IBM strategic data base management system. The HCS/DL/1 products provided patient registration and admission functions as well as creating the patient data base record.

In 1975, Duke University Medical Center in Durham, North Carolina, was searching for a comprehensive order entry and result reporting system that could also provide flexibility features that would allow the institution to "control its own destiny."

Because no such package existed, Duke developed such a system, HCS/DL/1-Patient Care System (5796-ANY, 5796-ATZ), which was announced in 1977 as an IBM Installed User Program (IUP). This product included order communications functions, which updated the patient data base with orders and results, and a user-friendly application development system used to maintain, modify, and extend the existing function. It was designed to use the functions of the HCS/DL/1 Registration and Admissions packages, and provided charge/credit input in a format acceptable to HCS/Accounting.

Although this product has traditionally been called "PCS", it will be referred to as "HCS-PCS" in this document to avoid confusion with the term "PCS" which now refers to the family of products.

HCS-PCS was popular and successful because of its unique combination of function and flexibility. This attractive feature allowed hospitals to implement applications and involve their users in making changes to the appearance and even the logic of the functions with little or no data processing intervention.

A DOS/VS version of HCS-PCS was created by Good Samaritan Hospital in Cincinnati, Ohio, and announced as an Installed User Program in 1978. A subsequent release of HCS-PCS provided admission/discharge/transfer functions for hospitals; however, most institutions continued to use the HCS/DL/1 Registration and Admission products.

Because of the uniqueness and success of the application generation tool contained in HCS-PCS, many hospitals began to develop their own applications from scratch rather than using the operational HCS-PCS applications as a base to build on. This focus on the development facility enabled several hospitals to make changes to the HCS-PCS development tool to add even more flexibility.

Sisters of Charity in Houston, Texas, extended the application development system with a data editor (PCS-Edit) to provide data editing. Cedars-Sinai Medical Center in Los Angeles, California, developed a generalized data management module (PCS-Data Manager) which simplifies data access and isolates program logic from the structure of the data bases. IBM released both of these extensions as IUPs.

Because of the popularity of the application development system and the demand for its availability as a separate product, IBM announced in 1981 the PCS-Application Development System (PCS-ADS) (5796-BCE, 5796-BCF). It included the original application development tool, PCS-Edit, PCS-Data Manager, and enhancements. It provided improved function, ease of use, efficiency, packaging, and support.

PCS-ADS was announced as an IUPX (extended support), since it was packaged and supported by IBM Software Development (now Application Systems Division--ASD). It was considered an IBM Health Industry strategic product whose architecture would be the basis for all future strategic offerings. PCS-ADS, like HCS-PCS, has become the basis for many other vendors' health application products and is widely accepted in the industry as a state-of-the-art application development system. Today there are more than 300 customers worldwide using the PCS architecture and applications as a basis for their hospital information system, including conversions to national languages.

Several additional applications have been developed by hospitals and made available from IBM:

- PCS-Infection Data Management (1981)
- PCS-Nursing Care Plans (1982)
- PCS-Surgery Reporting (1983)

To support the information requirements of the 80's the patient data base was enhanced and extended and, in 1982, IBM announced a new registration and admission system, PCS-Patient Management (PCS-PM) which replaced HCS DL/1. PCS-PM was developed by IBM ASD using the PCS-ADS architecture and was released as an IUPX. PCS-PM was designated as a strategic product since it not only contained admission, discharge, and transfer functions, but also created a basic set of data bases on which all future offerings would be built.

An updated version of HCS-PCS, called the PCS-Application Component, was made available in 1984 from IIS SI & PS to enable HCS-PCS to work with the PCS-PM data bases.

PCS-Patient Accounting, a licensed program, was announced in 1984. It was designed to meet the new financial information requirements of the 1980's in the areas of patient billing and accounts receivable. It was also designated as an IBM Health Industry strategic product.

In March, 1986, IBM announced the Medical Records and Concurrent Review program offering. This product was developed for IBM by Meta Health Technology Inc., and provides concurrent utilization review, DRG grouping (using the HCFA grouper), DRG optimization functions and medical records abstracting.

In April, 1986 IBM announced the PCS-ADS Online/Text program offering. This product was developed by Children's Hospital, Boston, and Information Resource Products, Inc., and supports text management online to make "help" functions and instructions easier to create and maintain.

In September, 1986, IBM announced the licensed program PCS-ORDERS which replaced HCS-PCS, PCS-Application Component, and PCS-Radiology. IBM also announced licensed program versions for PCS-ADS and PCS-PM. These new announcements emphasize IBM's commitment to PCS and IBM's intention to build further on this strategic system for intermediate to large health care institutions.

In April, 1988, IBM announced the PCS-Radiology Information Management licensed program as the first vertical extension of PCS-ORDERS in a specific departmental function. PCS-Radiology extends the radiology order entry and results reporting capabilities of PCS-ORDERS and provides specific radiology functions in support of administrative and operational activities such as appointment scheduling and film library management found in a diagnostic radiology facility. IBM also announced it intends to enhance the PCS-Radiology licensed program to include applications that support the integration of voice and image technology.

Today, the PCS family of products provides an integrated and comprehensive hospital information system that can be expanded to meet the changing requirements of a complex health care environment.

Figures 3-2 and 3-3 summarize the evolution of the basic PCS modules and their relationship to the health care environment.

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```
NEW          DATA NOT      DATA NOT     PROGRAMS     NEW
GOVT         EASILY        MANAGEABLE   DIFFICULT    GOVT
REGS         ACCESSIBLE                 TO MODIFY    REGS
(MEDICARE)                                           (DRG)

1965------1970---------1975----------1980---------1985--1986--1987--1988

BATCH:    ONLINE:      DATABASE:   APPLICATION ENHANCED
PATIENT   STANDALONE   ADMIN &     GENERATOR:  DATA BASE
ACCTG     ADMIN &      CLINICAL    ADMIN &     PAT ACCTG
PKG       CLINICAL     PACKAGES    CLINICAL    & ADMIN
            PACKAGES                 PACKAGES    PACKAGES

SHAS----->HCS/ACCTG-----------------------------> PCS-PA-- -------------------->

          HCS/ADT ---> HCS/DL/1 --------------> PCS-PM IUPX----PP--------------->
                       REG & ADM

                                                          PCS-MR/CR------------->

                        -----------------PCS-ADS IUPX----------LP--------------->
                        |                                       ---PCS--------->
                        |                                        |  RADIOLOGY LP
                        |                                        |
           HCS/OCS -> HCS/DL/1-------> HCS-PCS------>APPLIC--> PCS--------------->
                      OCS                            COMPONENT ORDERS LP

                                            * PCS-RADIOLOGY IUP

                                              PCS-NURSE CARE PLANS IUP

                                              PCS-INFECTION DATA MGT IUP

                                              PCS-SURGERY REPORTING IUP


* Withdrawn from marketing 9/86.
```

Figure 3-2. Time-line of Health Care Environment and PCS Evolution

| APPLICATION/FUNCTION | | | | | |
|---|---|---|---|---|---|
| YEAR | ACCOUNTING | ADMISSIONS | ORDER COMM | LANGUAGE | DEPARTMEN |
| 1968 | SHAS | | HISP | COBOL/ASM | |
| 1972 | HCS/Acctg | HCS/Admissions | | COBOL | |
| 1973 | • | • | HCS/Order Communications | COBOL | |
| 1974 | • | HCS/DL/1 Registration & Admission | HCS/DL/1 Order Communications | COBOL | |
| 1977 | • | • | HCS/DL/1 Patient Care System (HCS-PCS) | Application development tool in HCS-PCS | |
| 1979 | • | HCS-PCS new release | • | • | |
| 1981 | • | • | • | PCS-Application Development System IUPX (PCS-ADS) | |
| 1983 | • | PCS-Patient Management IUPX (PCS-PM) | • | • | |
| 1984 | • | • | PCS-Application Component | • | |
| 1985 | PCS-Patient Accounting LP (PCS-PA) | • | • | • | PCS-Medical Records PO |
| 1986 | • | PCS-PM LP | PCS-ORDERS LP | PCS-ADS LP | |
| 1987 | • | • | • | • | |
| 1988 | • | • | • | • | PCS-Radiolog LP |

Figure 3-3. Summary of Evolution of Key PCS Products

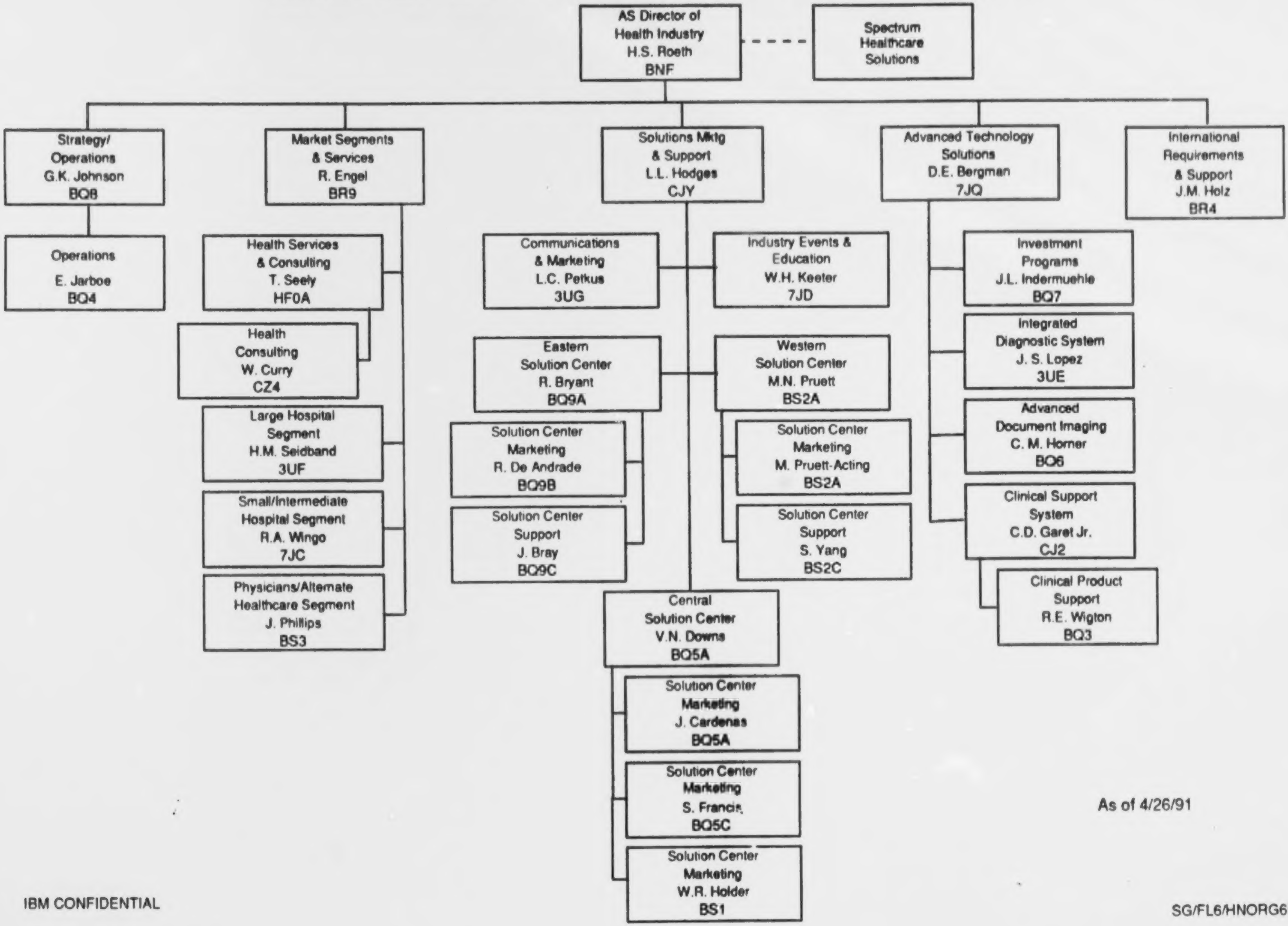
Because of the different versions of PCS products over the years, it is easy to understand why the term "PCS hospital" can have many meanings. A PCS hospital might have used PCS-ADS to develop a hospital system from scratch rather than purchasing any of the PCS application functions. Another PCS hospital may have developed its own admitting system to be used with HCS-PCS applications and would need additional PCS products to be properly positioned for strategic PCS offerings. Still another may have started out with PCS-ADS and PCS-PM and may be installing PCS-PA and PCS-ORDERS.

It is important, in understanding customers in your territory, to know exactly which PCS products are in use by the hospital so you can interpret the current account position and develop future strategies.

Your account strategy with current PCS customers should be to convince the hospital that they should replace the older versions of PCS with the current PCS-ADS and PM licensed programs.

- PCS-ADS and PM licensed programs are prerequisite programs for PCS-Patient Accounting and PCS-ORDERS.
- PCS-ADS, PM and ORDERS licensed programs are prerequisite programs for PCS-Radiology
- The PCS licensed programs are fully supported IBM software products.
- The PCS licensed programs will be the base products for other applications in the future.
- PCS licensed programs are strategic with IBM's long range commitments to SAA.
- The PCS IUPX products have been withdrawn from marketing and support for them may be withdrawn upon six months notice by IBM.

# IBM HEALTH INDUSTRY MARKETING



- AS Director of Health Industry H.S. Roeth BNF
  - Spectrum Healthcare Solutions
  - Strategy/Operations G.K. Johnson BQ8
    - Operations E. Jarboe BQ4
  - Market Segments & Services R. Engel BR9
    - Health Services & Consulting T. Seely HF0A
      - Health Consulting W. Curry CZ4
    - Large Hospital Segment H.M. Seidband 3UF
    - Small/Intermediate Hospital Segment R.A. Wingo 7JC
    - Physicians/Alternate Healthcare Segment J. Phillips BS3
  - Solutions Mktg & Support L.L. Hodges CJY
    - Communications & Marketing L.C. Petkus 3UG
    - Industry Events & Education W.H. Keeter 7JD
    - Eastern Solution Center R. Bryant BQ9A
      - Solution Center Marketing R. De Andrade BQ9B
      - Solution Center Support J. Bray BQ9C
    - Western Solution Center M.N. Pruett BS2A
      - Solution Center Marketing M. Pruett-Acting BS2A
      - Solution Center Support S. Yang BS2C
    - Central Solution Center V.N. Downs BQ5A
      - Solution Center Marketing J. Cardenas BQ5A
      - Solution Center Marketing S. Francis BQ5C
      - Solution Center Marketing W.R. Holder BS1
  - Advanced Technology Solutions D.E. Bergman 7JQ
    - Investment Programs J.L. Indermuehle BQ7
    - Integrated Diagnostic System J. S. Lopez 3UE
    - Advanced Document Imaging C. M. Horner BQ6
    - Clinical Support System C.D. Garet Jr. CJ2
      - Clinical Product Support R.E. Wigton BQ3
  - International Requirements & Support J.M. Holz BR4

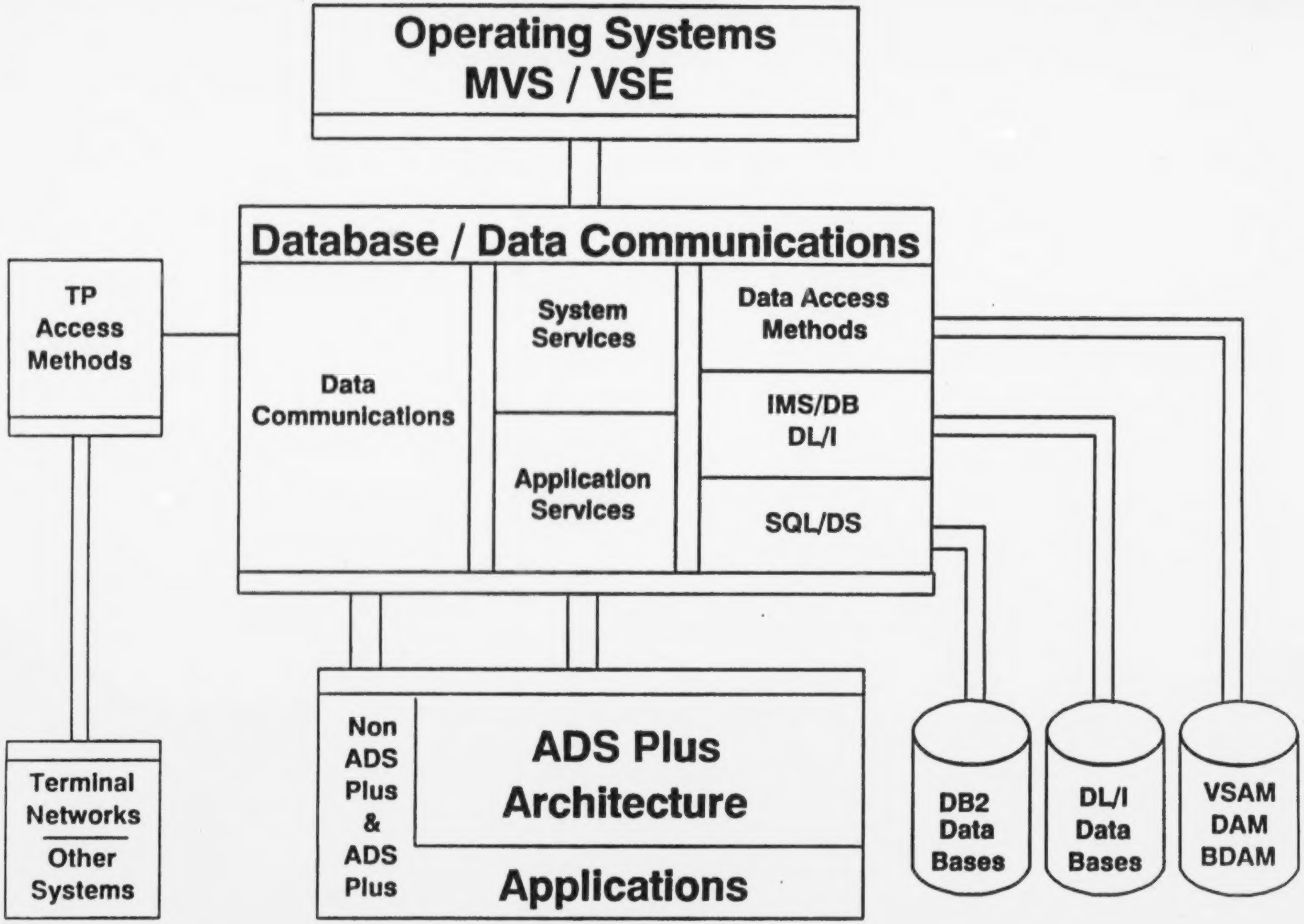
As of 4/26/91

## Series 5000

# The Technology Platform

Current Environment

- ES/9000 Hardware Configuration
- MVS/ESA - VSE/ESA
- CICS/ESA
- IMS/ESA
- ADS Plus



**Operating Systems**
**MVS / VSE**

**Database / Data Communications**

Data Communications

System Services

Application Services

Data Access Methods

IMS/DB
DL/I

SQL/DS

TP
Access
Methods

Terminal
Networks

Other
Systems

Non
ADS
Plus
&
ADS
Plus

**ADS Plus**
**Architecture**

**Applications**

DB2
Data
Bases

DL/I
Data
Bases

VSAM
DAM
BDAM

**Spectrum Series 5000 Environment**

## Series 5000

# Technical Competitive Advantage

*Series 5000*

- S/390 Technology Base
- Superior Systems Performance
- 24 Hour Availability - Integrated Recovery
- On-Line - Realtime
- ESA Based Database Management Systems
- Exploits Latest Hardware (eg3990 DASD)
- ESA Level CICS Software

## SERIES 5000

# IMPLEMENTATION METHODOLOGY

# METHODOLOGY

*MANAGEMENT, PLANNING, EXECUTION, AND EVALUATION TASKS*

- IMPACT STUDY
- IMPLEMENTATION PLAN
- TEAM APPROACH
- REQUIREMENTS DEFINITION
- QUALITY ASSURANCE
- TRAINING AND EDUCATION
- POST-INSTALLATION SUPPORT

# PROJECT RESOURCE

## *SENIOR MANAGEMENT STEERING COMMITTEE*

- **Administrative, Departmental, Nursing, Physician**
- **Track Project Team Progress**
- **Monthly Meetings**

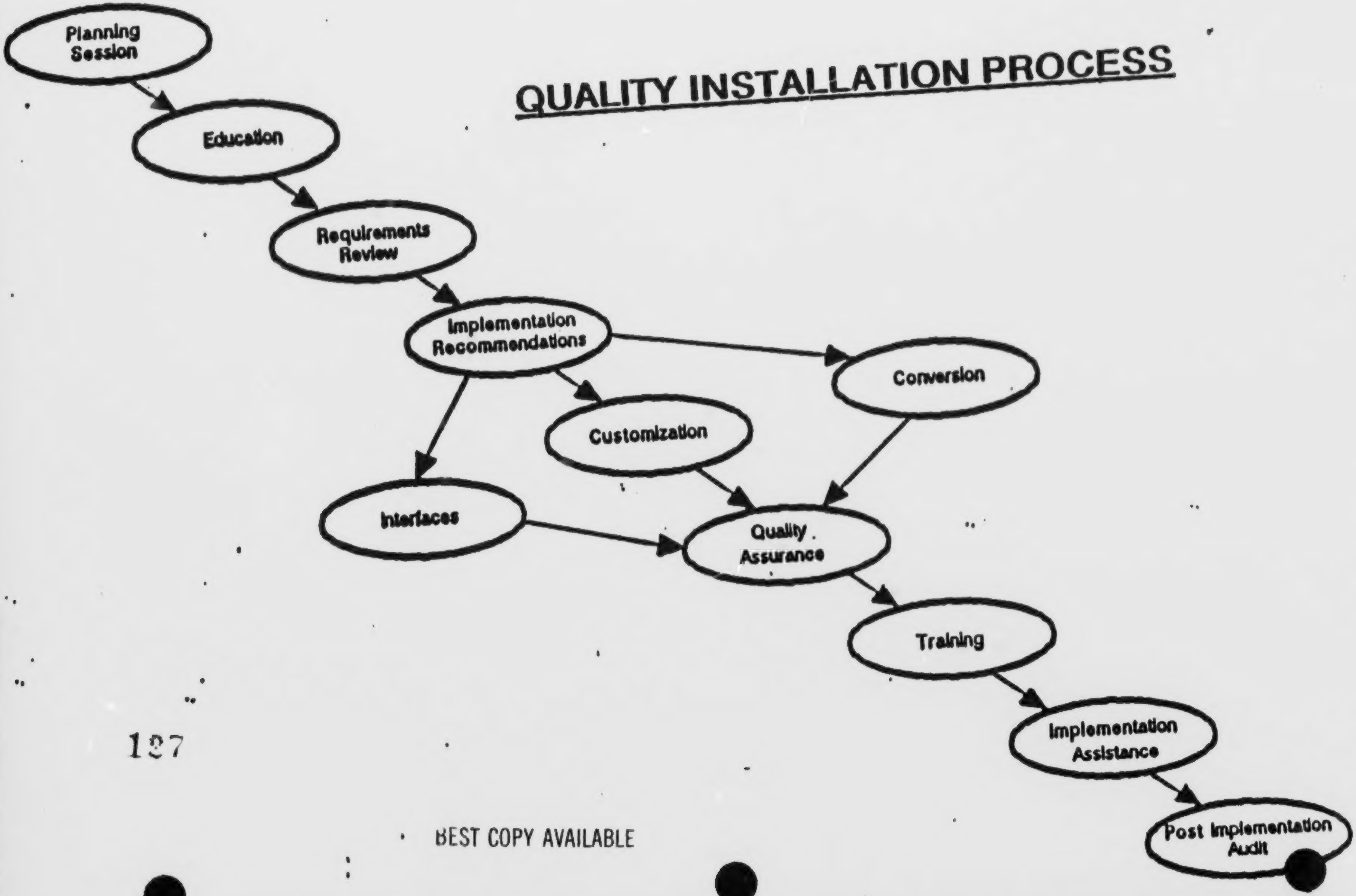
## *PROJECT TEAM*

- **Nursing Co–ordinator**
- **Ancillary Co–ordinator**
- **Education Co–ordinator/Team**
- **Nursing/Ancillary Liasons**
- **Programming/Operations Staff**
- **Augmented by Project Manager and Leaders**
- **Weekly Meetings**

# QUALITY INSTALLATION PROCESS

- Client – Vendor Partnership... ensures smooth implementation
- Involves total organization and emphasizes coordination among departments
- Management review and acceptance of each major segment
- Project Status reporting
- Outlines deliverable requirements
- Better management visibility of project, benefits, and delivery dates

# QUALITY INSTALLATION PROCESS



Planning Session

Education

Requirements Review

Implementation Recommendations

Conversion

Customization

Interfaces

Quality Assurance

Training

Implementation Assistance

Post Implementation Audit

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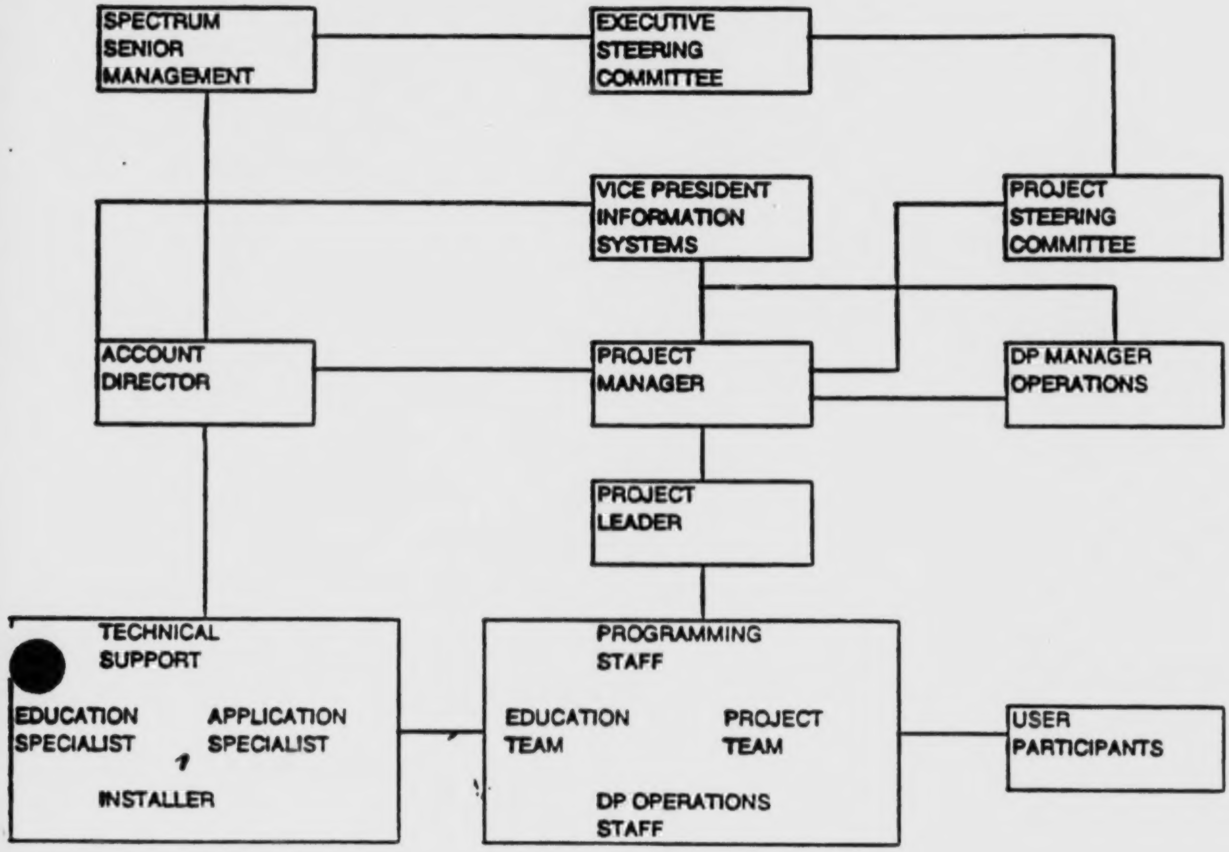
## PROJECT ORGANIZATION AND REPORTING RELATIONSHIPS


SPECTRUM SENIOR MANAGEMENT
EXECUTIVE STEERING COMMITTEE
VICE PRESIDENT INFORMATION SYSTEMS
PROJECT STEERING COMMITTEE
ACCOUNT DIRECTOR
PROJECT MANAGER
DP MANAGER OPERATIONS
PROJECT LEADER
TECHNICAL SUPPORT
EDUCATION SPECIALIST
APPLICATION SPECIALIST
INSTALLER
PROGRAMMING STAFF
EDUCATION TEAM
PROJECT TEAM
DP OPERATIONS STAFF
USER PARTICIPANTS

SERIES 5000

# IMPLEMENTATION PLAN

- CONSISTENT APPROACH TO PROJECT PLANNING AND MANAGEMENT
- MECHANISM TO COMMUNICATE PROJECT STATUS
- PROVIDES CONCISE LIST OF TASKS

  - RESPONSIBILITIES
  - DELIVERABLES
  - TIME FRAMES

- MILESTONE CHECKPOINTS
- USER INVOLVEMENT THROUGHOUT PROCESS
- THOROUGH DOCUMENTATION
- HIGHLIGHTS RESOURCE UTILIZATION
- PROJECT STATUS REPORTING
- BUILT IN APPROVAL PROCESS

# PROJECT PLAN FORMAT

UNIFORM NUMBERING SCHEME AND DESCRIPTION

PHASES/STEP/TASK/SUB-TASK

MILESTONES DELINEATED

BUILT-IN APPROVAL PROCESS

RESPONSIBLE PARTY IDENTIFIED

| | |
|---|---|
| HSC | HOSPITAL STEERING COMMITTEE |
| HPM | HOSPITAL PROJECT MANAGER |
| HPL | HOSPITAL PROJECT LEADERS |
| HDP | HOSPITAL DATA PROCESSING MANAGER |
| HSP | HOSPITAL SYSTEMS PROGRAMMING STAFF |
| HPS | HOSPITAL PROGRAMMING SUPPORT |
| HPT | HOSPITAL PROJECT TEAM |
| HET | HOSPITAL EDUCATION TEAM |
| SSM | SPECTRUM SENIOR MANAGEMENT |
| SAD | SPECTRUM ACCOUNT DIRECTOR |
| SAS | SPECTRUM APPLICATION SPECIALIST |
| STS | SPECTRUM TECHNICAL SUPPORT |
| SES | SPECTRUM EDUCATION SPECIALIST |
| SIN | SPECTRUM INSTALLER |

PARTICIPANTS IDENTIFED

START AND STOP DATES SET

DELIVERABLES DEFINED

# MILESTONES

KICKOFF MEETING
PROJECT STAFFING
PROJECT PLAN APPROVAL
VALIDATE SOFTWARE INSTALL
TECHNICAL EDUCATION
APPLICATION EDUCATION
SCOPE DEFINITION
REQUIREMENTS REVIEW
VALIDATE PROFILING
CUSTOMIZATION SPECIFICATIONS REVIEW
CONVERSION SPECIFICATIONS APPROVAL
INTERFACE SPECIFICATIONS APPROVAL
USER APPROVAL OF CUSTOMIZATIONS
SITE PREPARATION APPROVAL
CUSTOMIZED SYSTEM FINAL APPROVAL
PROCEDURE MANUAL APPROVAL
TRAIN OPERATORS
SYSTEM TESTING APPROVAL
TRAINING PLAN APPROVAL
HARDWARE INSTALL CONFIRMATION
CONVERSION PLAN/SCHEDULE APPROVAL
IMPLEMENT SYSTEM
POST IMPLEMENTATION AUDITS

# PROJECT PHASES

ORGANIZE AND ADMINISTER PROJECT

ESTABLISH THE OPERATIONS ENVIRONMENT

DOCUMENT USER REQUIREMENTS

DOCUMENT CONVERSION REQUIREMENTS

DOCUMENT INTERFACE REQUIREMENTS

PLAN PERIPHERAL EQUIPMENT AND SITE PREPRATION

CUSTOMIZE SYSTEM AND RELATED DOCUMENTATION

CONDUCT APPLICATION FUNCTION TESTING

DEVELOP DEPARTMENTAL PROCEDURES

CONDUCT INTEGRATED SYSTEM TEST

PLAN AND CONDUCT END USER TRAINING

INSTALL PERIPHERAL DEVICES

IMPLEMENT PRODUCTION SYSTEM

CONDUCT POST IMPLEMENTATION REVIEW

# IMPACT ON ORGANIZATION

- IMPACT STUDY
- REQUIREMENTS ANALYSIS
- SCOPE
- PROCEDURES

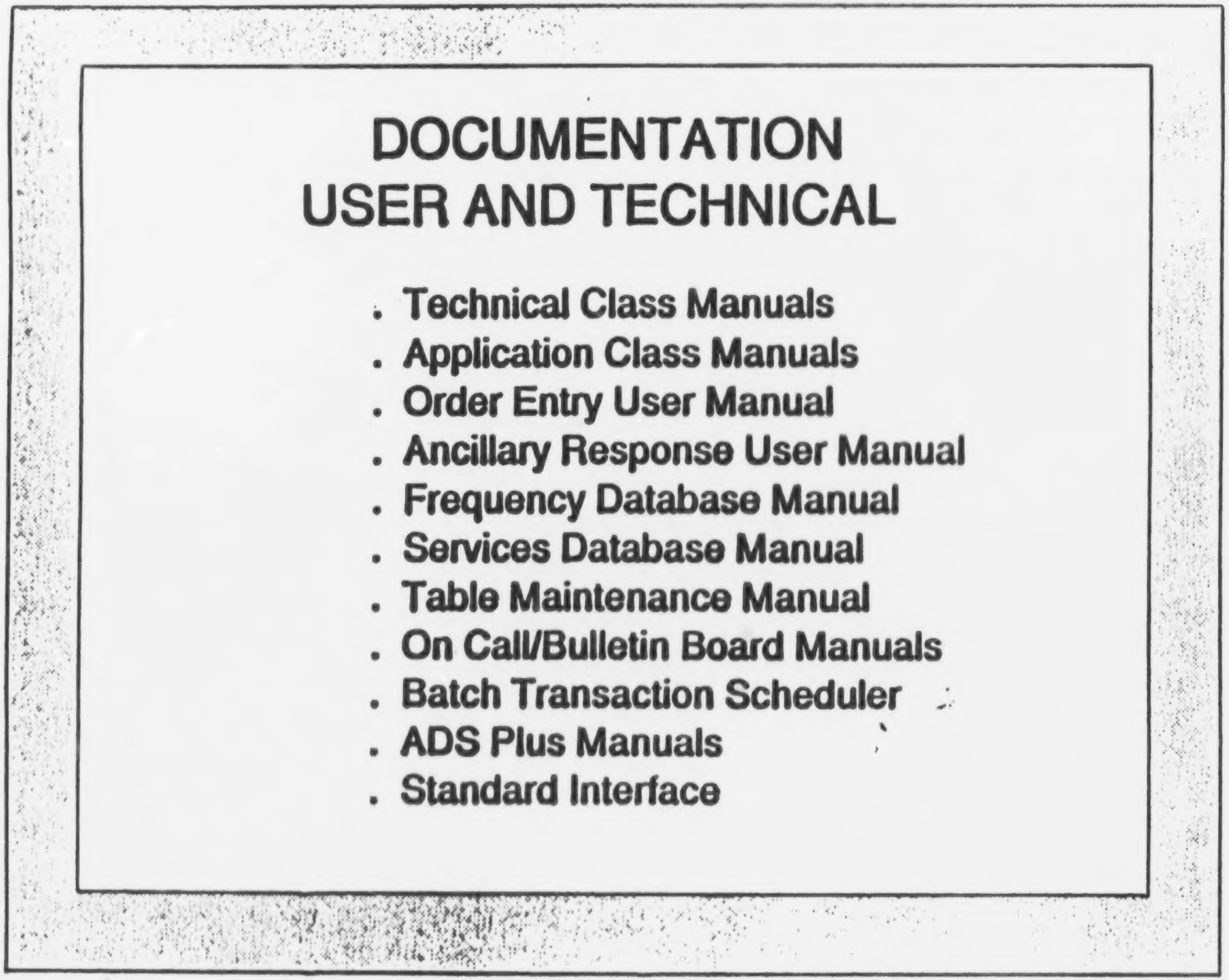
# SPECTRUM COURSE OFFERINGS

## TECHNICAL:

**Basic Coding Techniques**
**Advanced Technical Skills**
**Databases**
**Operating Systems**
**ADS Software**
**Clinical Care System Technical**

## APPLICATION:

Order Entry/Ancillary Response
Advanced Nursing Functions



# DOCUMENTATION
# USER AND TECHNICAL

- Technical Class Manuals
- Application Class Manuals
- Order Entry User Manual
- Ancillary Response User Manual
- Frequency Database Manual
- Services Database Manual
- Table Maintenance Manual
- On Call/Bulletin Board Manuals
- Batch Transaction Scheduler
- ADS Plus Manuals
- Standard Interface

# OPERATIONS ENVIRONMENT

- TECHNICAL ENVIRONMENT
  - CAPACITY PLANNING
  - HARDWARE ENVIRONMENT
  - OPERATING SYSTEM CONSIDERATIONS, OPTIONS, PARAMETERS
  - ACCEPTABLE STANDARDS
    - ADEQUATE RESPONSE TIME
    - ADEQUATE DATA STORAGE

# CONVERSION METHODOLOGY

- SYSTEMS
- DATABASE COMPONENTS
- REQUIREMENTS
- STANDARDIZED APPROACH
- "ABILITIES"

# INTERFACE METHODOLOGY

- SYSTEMS
- PROTOCOLS
- REQUIREMENTS
- STANDARDIZED APPROACH

# CUSTOMIZE SYSTEM

## DETAIL DESIGN

- Detailed Specifications
- Common Orders, Categories
- Clinical Data Screens
- Charge Generation
- Worklist Functions
- Results Reporting
- Tables Customization
- On-Line Database Customization
- Forms
- Manual Functions for Downtime
- Documentation
- Approval

# QUALITY ASSURANCE TESTING

## *UNIT TESTING/APPLICATION FUNCTION*

- Expected outcome based on detail design
- Standard Scripts
- Structure
- Documentation
- Approval

# QUALITY ASSURANCE TESTING

## *INTEGRATED TESTING*

- Expected outcome based on detail design
- Included control data from existing systems
- Interfaces Activated
- Conversion Data
- Documentation
- Approval

# PROCEDURES

*APPROVAL*

- Documentation
    - Thorough
    - Complete
- Contributes to long term operational success
- Avoids misunderstandings

# TRAINING

- TRAINER TRAINING
  - Internal Specialists
- COURSE DEVELOPMENT
  - Planning
  - Objectives
  - Parameters
  - Structure
- TRAINING EFFECTIVENESS
  - Principles
  - Factors
  - Skills

# TRAINING

## *EDUCATION*

- TRAINING MATERIALS
    - TEXTS
    - PRESENTATIONS
    - EXERCISES
    - EVALUATIONS

- TRAINING FACILITIES

- TRAINING SCHEDULE

- INSTRUCTOR TRAINING

- TRAINING SESSIONS

- FEEDBACK/REVIEW

# IMPLEMENTATION

## *PRODUCTION*

- Initialize Databases
- Convert Databases
- Activate Interfaces
- Execute New System
- Ensure Key Player Participation
- Support - Support - Support
- Success

# POST IMPLEMENTATION SUPPORT

*CUSTOMER SERVICE CENTER*
- HELP DESK
- DIAL-IN SUPPORT

*SOFTWARE UPGRADES*
- NEW FEATURES
- EXPANDED FUNCTIONALITY
- PERFORMANCE TUNING

*INTERIM RELEASE TAPES*
- PROBLEM RESOLUTION

*DOCUMENTATION*
- RELEASE UPDATES

*POST IMPLEMENTATION AUDITS*

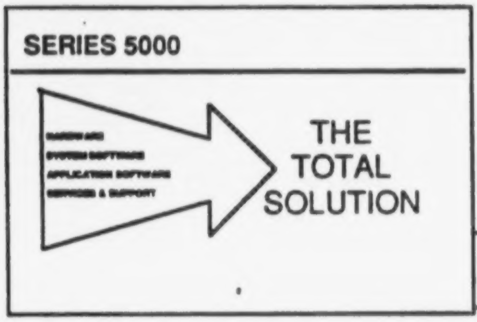
# POST IMPLEMENTATION REVIEW

## *POST PRODUCTION AUDIT REVIEW*

- New Feature Functions Meet Hospital Objectives
- User Action/Reaction
- Project Adherence to Project Master Plan and Project Workplans
- Overall User Satisfaction
- Approval
- Check Points at 7, 30, 60, and 90 days

**SPECTRUM**

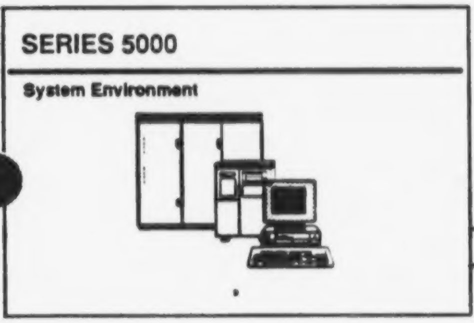
*Healthcare Solutions*



## SERIES 5000

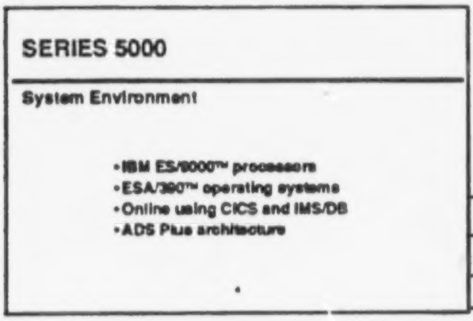
HARDWARE
SYSTEM SOFTWARE
APPLICATION SOFTWARE
SERVICES & SUPPORT

THE
TOTAL
SOLUTION



## SERIES 5000

**System Environment**



## SERIES 5000

**System Environment**

- IBM ES/9000™ processors
- ESA/390™ operating systems
- Online using CICS and IMS/DB
- ADS Plus architecture

## SERIES 5000
## SYSTEM ENVIRONMENT

**IBM System/390**

- ES/9000™ family of processors
- ESA/390™ family of operating systems
- Online real-time transaction processing
- Comprehensive system and data security

## SERIES 5000

**Software Platform**

- IBM Enterprise Systems Architecture/390
- IBM MVS/ESA operating system
- IBM VSE/ESA operating system
- CICS version 3
- IMS/DB version 3—DL/I version 2
- Fourth generation language

## SERIES 5000

**Hardware Platform**

- IBM ES/9000 processors
- IBM ESA/390 architecture
- Price/performance
- Processor Resource/Systems Manager (PR/SM)
- Enterprise System Connection architecture (ESCON)
- Numerous upgrade and migration paths

## SERIES 5000

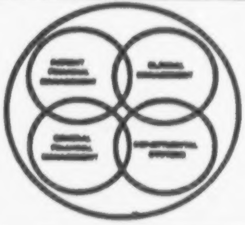
**Application Software**

## SERIES 5000

**Hospital Information System**

- Full function
- Integrated database
- Multiple access
- ADS PLUS based
- IBM 360 architecture
- Security & auditability
- Bar coding

## SERIES 5000



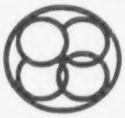
## SERIES 5000

**System Benefits**

- Better information communicated quicker
- Increases revenue by improving cash flow and (demand billing) reducing lost charges
- Reduces duplication of efforts
- Security/confidentiality protection
- Auditability assists quality assurance management

## SERIES 5000

**Patient Financial Management**



- Registration/Admissions
- Patient Accounting
- Medical Records

## SERIES 5000

**Registration/Admission Functions**

- Patient inquiry
- Patient profile
- Inpatient admissions
- Bed control functions
- Census/reports

## SERIES 5000

**Registration/Admission Functions**

- Emergency registrations
- Outpatient registrations
- Recurring outpatient registrations
- Special registrations

## SERIES 5000

**Registration/Admission**

**Key Features**

- Patient type conversions
- Copy/convert preadmission
- Insurance history
- Guarantor on MPI
- 9 alias names
- Newborn admission
- 9 accommodations per room

## SERIES 5000

**Registration/Admission**

**Key Features**

- Pending transfer/discharge worklists
- "Doe" registration
- Retroactive census processing
- Leave of absence
- Online census inquiry

## SERIES 5000

**Registration/Admission**

**Benefits**

- Easy-to-use screen flows with online help
- Streamlined registration/admission flows
- Accurate online, real-time information
- Timely distribution of data enhances communication which reduces costly delays.

## SERIES 5000

**Registration/Admission**

**Benefits**

- Integrated database eliminates duplicate data entry
- Automatic account creation allows immediate charge/cash processing
- Automatically updates revenue and statistics

## SERIES 5000

**Patient Accounting Functions**

- Third-party database
- Service master database
- Account life cycle
- Display account information
- Insurance verification
- Charge/credit processing
- Billing functions
- Collection functions

## SERIES 5000

**Patient Accounting Functions**

- Federal & state regulatory compliance
- Charge payment & adjustment processing
  - Electronic payments
  - Automatic adjustments/rebill/secondary billing
- Internal/external collections
- Agency capability

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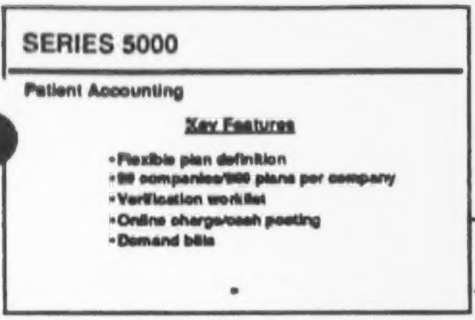
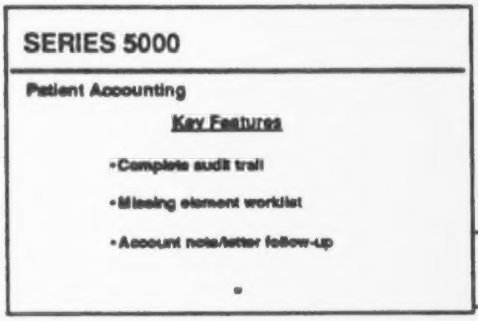


## SERIES 5000

**Patient Accounting**

**Key Features**

- Flexible plan definition
- 99 companies/999 plans per company
- Verification worklist
- Online charge/cash posting
- Demand bills

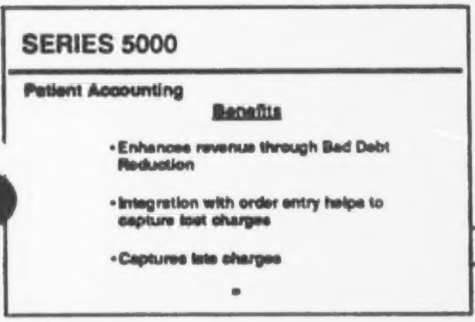


## SERIES 5000

**Patient Accounting**

**Key Features**

- Complete audit trail
- Missing element worklist
- Account note/letter follow-up

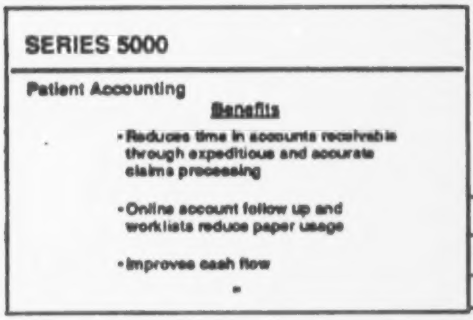


## SERIES 5000

**Patient Accounting**

**Benefits**

- Enhances revenue through Bad Debt Reduction
- Integration with order entry helps to capture lost charges
- Captures late charges



## SERIES 5000

**Patient Accounting**

**Benefits**

- Reduces time in accounts receivable through expeditious and accurate claims processing
- Online account follow up and worklists reduce paper usage
- Improves cash flow

## SERIES 5000

**Medical Records Functions**

- Chart tracking
- Chart completion
- Chart correspondence
- Abstract management
- Concurrent review

---

## SERIES 5000

**Medical Records Features**

- Pre-certification
- PRO - monitoring
- CHARMSCoder
- Flex Data
- AD HOC reporting

---

## SERIES 5000

**Medical Records**

**Benefits**

- Provides comprehensive management of patient records for meeting governmental and agency requirements
- Allows accurate DRG assignment which assists hospitals in receiving the maximum level of reimbursement
- Expedites record completion by monitoring chart status and reporting key chart deficiencies

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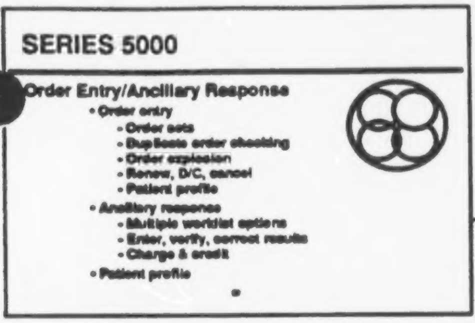
## SERIES 5000

**Clinical Care Functions**

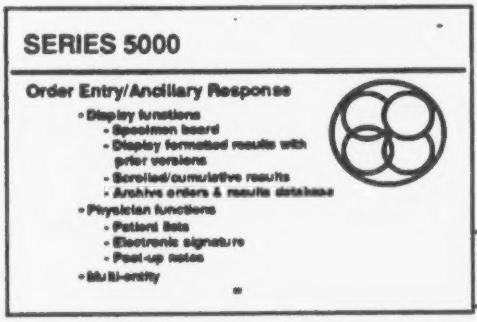
- Order Entry/Ancillary Response
- Care Planning
- Online Charting
- Discharge Planning



## SERIES 5000

### Order Entry/Ancillary Response

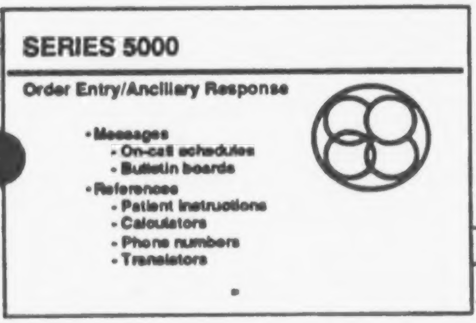
- Order entry
  - Order sets
  - Duplicate order checking
  - Order explosion
  - Renew, D/C, cancel
  - Patient profile
- Ancillary response
  - Multiple worklist options
  - Enter, verify, correct results
  - Charge & credit
- Patient profile



## SERIES 5000

### Order Entry/Ancillary Response

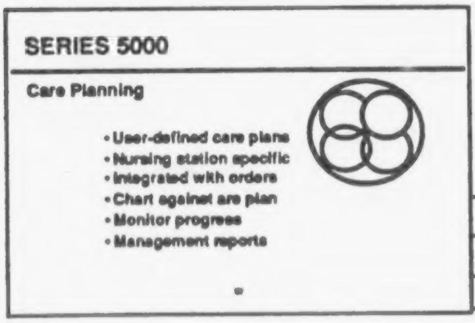
- Display functions
  - Specimen board
  - Display formatted results with prior versions
  - Scrolled/cumulative results
  - Archive orders & results database
- Physician functions
  - Patient lists
  - Electronic signature
  - Post-up notes
- Multi-entity



## SERIES 5000

### Order Entry/Ancillary Response

- Messages
  - On-call schedules
  - Bulletin boards
- References
  - Patient instructions
  - Calculators
  - Phone numbers
  - Translators



## SERIES 5000

### Care Planning

- User-defined care plans
- Nursing station specific
- Integrated with orders
- Chart against are plan
- Monitor progress
- Management reports

## SERIES 5000

**Online Charting**

- Vital signs, height & weight
- Circumference & unit test
- Neurochecks, Glasgow Coma scale
- Intake & output
- Progress/SOAPE/Transfer notes
- POHN
- Specialty notes
- Medications charting

## SERIES 5000

**Discharge Planning**

- Interdisciplinary
- Risk factor screening
- Social/functional assessment
- Consultants' worklists
- Discharge notes
- Final discharge plan

## SERIES 5000

**Clinical Care**

Benefits

- Reduces cost of patient care by decreasing time spent on clerical tasks
  - Increases efficiency of the nursing unit
- Improves patient care by increasing communication and decreasing order transcription errors

## SERIES 5000

**Departmental Systems**

- Pharmacy Management
- Radiology Information Management
- Appointment Scheduling
- Materials Management

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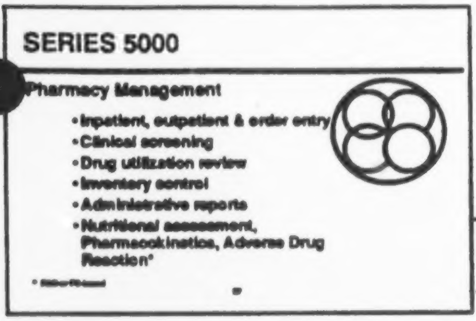
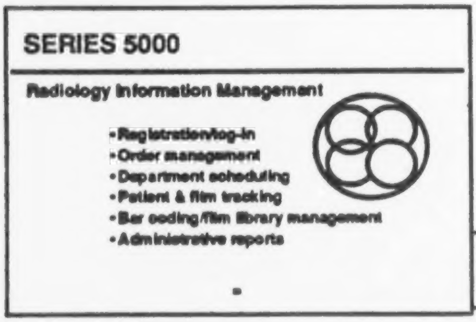


## SERIES 5000

### Pharmacy Management

- Inpatient, outpatient & order entry
- Clinical screening
- Drug utilization review
- Inventory control
- Administrative reports
- Nutritional assessment, Pharmacokinetics, Adverse Drug Reaction*

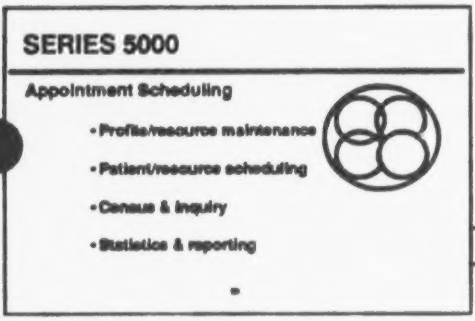
* [illegible]



## SERIES 5000

### Radiology Information Management

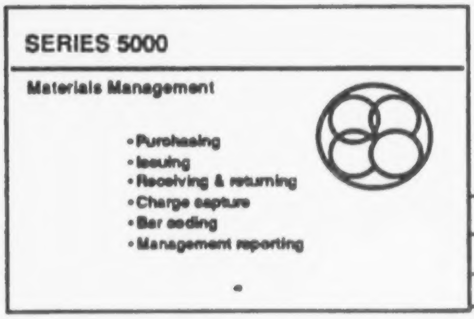
- Registration/log-in
- Order management
- Department scheduling
- Patient & film tracking
- Bar coding/film library management
- Administrative reports



## SERIES 5000

### Appointment Scheduling

- Profile/resource maintenance
- Patient/resource scheduling
- Census & inquiry
- Statistics & reporting



## SERIES 5000

### Materials Management

- Purchasing
- Issuing
- Receiving & returning
- Charge capture
- Bar coding
- Management reporting

## SERIES 5000

**Additional Departmental Systems**

- OR System (AS/400)
- Physician Series (PS/2)

## SERIES 5000

**Operating Room Management**

- Scheduling
- Case prepping
- Case history
- Implant registry
- Inventory control

## SERIES 5000

**Physician Series**

- Physician ←→ hospital communication
- Network services
- Practice management
- Claims processing

## SERIES 5000

**GENERAL FINANCIAL MANAGEMENT**

- General ledger
- Accounts payable
- Cost accounting

## SERIES 5000

**General Ledger**

- Responsibility reporting
- Profit planning and forecasting
- Real-time reporter
- Electronic spreadsheet

---

## SERIES 5000

**Accounts Payable**

- Vendor payment
- Invoice processing
- Cash management
- General ledger interface
- Material price variance accounting
- Travel advance accounting
- Government reporting

---

## SERIES 5000

**Cost Accounting**

- Company/procedure file
- Standard treatment patterns
- Patient activity/summary
- Requirement planning and reporting

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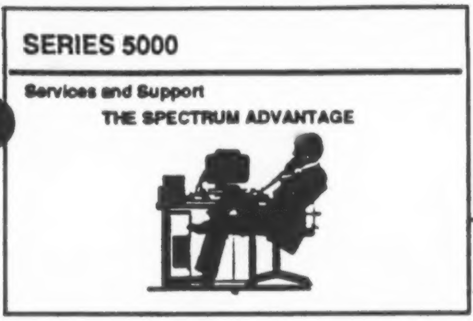
## SERIES 5000

**Third Party**

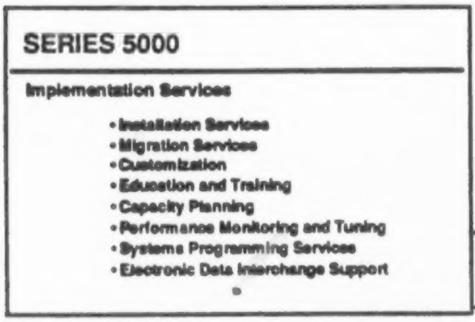
- 3M Health Information Systems
- DKD
- CIS Technology
- ComCotec, Inc.



## SERIES 5000

**Services and Support**

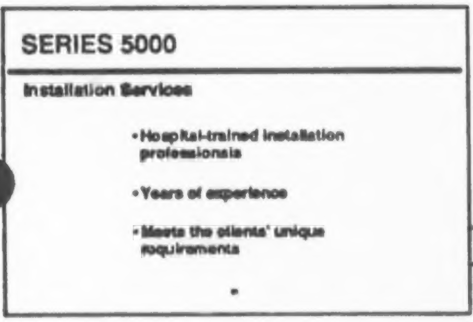
**THE SPECTRUM ADVANTAGE**



## SERIES 5000

**Implementation Services**

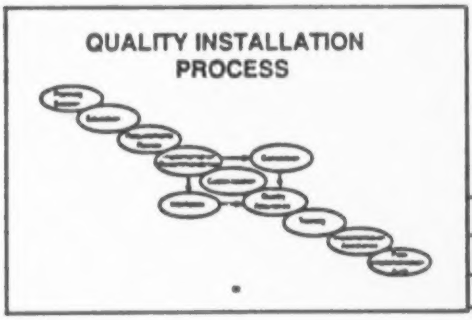
- Installation Services
- Migration Services
- Customization
- Education and Training
- Capacity Planning
- Performance Monitoring and Tuning
- Systems Programming Services
- Electronic Data Interchange Support



## SERIES 5000

**Installation Services**

- Hospital-trained installation professionals
- Years of experience
- Meets the clients' unique requirements



## QUALITY INSTALLATION PROCESS

## SERIES 5000

1990 Successful Installs

- Patient Financial Management
  - 10 in production
- Clinical Management
  - 5 in production

---

## SERIES 5000

Patient Financial Management Successes

- Toledo Hospital - Toledo, Ohio
  Registers emergency room patients at the bedside using the 7500 Clinical Workstation.
- SeCor Systems - St. Therese - Waukegan, Illinois
  "Smooth conversion, and master patient index for the first time."

---

## SERIES 5000

Clinical Management Installation Successes

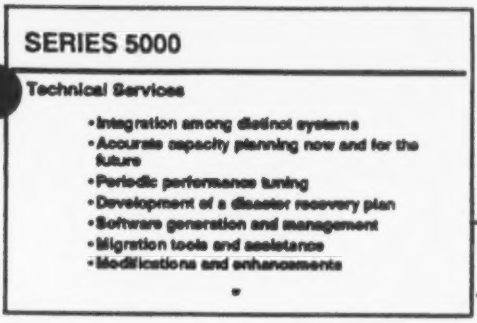
- South Hills Health Systems - Pittsburgh, PA
  Implemented Care Plans in 6 months, Order Entry 2 months later with 1 programmer/1 coordinator
- Palomar Pomerado - Escondido, CA
  Implemented Order Entry in 4 facilities in 12 months, with 1 programmer/2 coordinators
- Holston Valley Hospital - Kingsport, TN
  Implemented Order Entry Dietary in 4 months with 2 programmers/1.5 coordinators

---

## SERIES 5000

Education

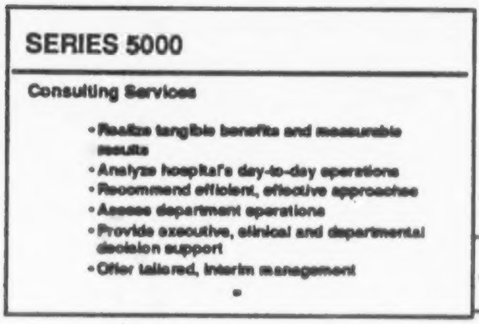
- Flexible and comprehensive programs
- On-site classes maximize your staff's productivity
- Instruction in better utilization of system's features
- Application knowledge and technical information
- Classes for improving departmental operations



## SERIES 5000

**Technical Services**

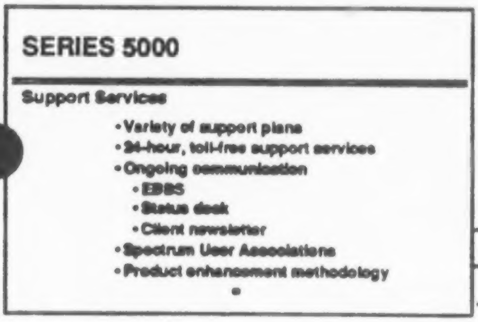
- Integration among distinct systems
- Accurate capacity planning now and for the future
- Periodic performance tuning
- Development of a disaster recovery plan
- Software generation and management
- Migration tools and assistance
- Modifications and enhancements



## SERIES 5000

**Consulting Services**

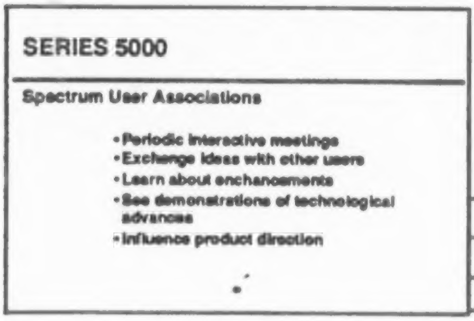
- Realize tangible benefits and measurable results
- Analyze hospital's day-to-day operations
- Recommend efficient, effective approaches
- Assess department operations
- Provide executive, clinical and departmental decision support
- Offer tailored, interim management



## SERIES 5000

**Support Services**

- Variety of support plans
- 24-hour, toll-free support services
- Ongoing communication
  - EBBS
  - Status desk
  - Client newsletter
- Spectrum User Associations
- Product enhancement methodology



## SERIES 5000

**Spectrum User Associations**

- Periodic interactive meetings
- Exchange ideas with other users
- Learn about enchancements
- See demonstrations of technological advances
- Influence product direction

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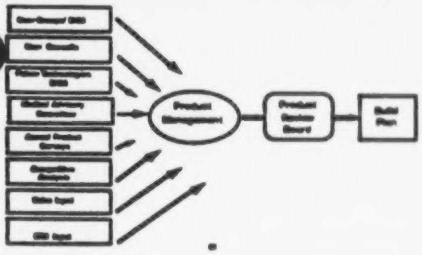
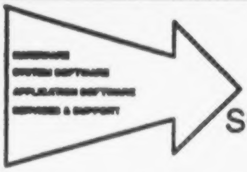
## Product Enhancement Methodology


Product Management

## SERIES 5000


HARDWARE
SYSTEM SOFTWARE
APPLICATION SOFTWARE
SERVICES & SUPPORT

THE
TOTAL
SOLUTION

## SERIES 5000

**The Spectrum Advantage**

**Product Strengths**

- Standard IBM operating systems
- Large S/3XX install base
- Integration of applications
- Enhancements and support

## SERIES 5000

**The Spectrum Advantage**

**Support and Services**

- Knowledge of S/3XX environment
- Employee experience/background
- 24-hours, 7 days-a-week support
- Performance/capacity planning
- Ongoing client support
- Ongoing educational offerings

# Series 5000 Marketing Programs

## Key Contacts and Organizational Support

- Vivan Spicer - Product Marketing Specialist
- Bill Smorczewski - IBM
- Tom Perricone - Proposals
- Marlon Ketani - Competitive Information
- Frank Martin - Contracts
- Frank Canonica - Marketing communications

# MARKETING COLLATERALS

POCKET BROCHURE -- As its name implies, this brochure fits into a shirt pocket (or a #10 envelope). Spectrum currently produces pocket brochures for Series 3000, Series 4000, Series 5000 and Physician Series products. The purpose is to present a brief overview of the applications available within a specific product group. (Order through Central Supply)

FACT SHEET -- (Sometimes referred to as a "Spec Sheet" as in "specification") This 8 1/2 X 11" sheet presents a detailed description of a specific application, complete with features, benefits, highlights and hardware requirements. Fact/Spec Sheets are available for most applications within Series 3000, Series 4000, Series 5000, and Physician Series products. (Available by application in packs of 200 copies through Central Supply)

SKETCHES -- "Sketches" is a feature publication of the marketing communications department which showcases an impressive installation of a Spectrum system. It is written from the perspective of a user, citing specific benefits the institution has realized since installing the system. This type of publication is also called a "client testimonial." (Order through Marketing Communications)

COMPANY PROFILE -- This is Spectrum's premier literature offering which introduces a prospective client to the products, services and philosophies of Spectrum Healthcare Solutions. This impressive, full-color brochure presents the company in the same fashion as an Annual Report would for a public company, showcasing the strengths and advantages of dealing with Spectrum. (Order through Central Supply)

FLASH FOCUS -- This internal publication is aimed at marketing representatives of Spectrum, Baxter and IBM, capsuling product and marketing news, and significant events at Spectrum in a quick, easy-to-read format. (Published 17 times a year, extra copies are available through Marketing Communications)

DEPARTMENTAL BROCHURES -- RIM, Pharmacy Management Systems, and others as they are introduced, provide detailed information on features and benefits. (Order through Central Supply)

AD REPRINTS -- Copies of Spectrum ads as they appeared in publication. (Order through Marketing Communications)

## Hospital Information System

## GENERAL LEDGER

The Series 5000 General Ledger application provides the functions necessary to analyze the financial position of a health care institution. Integrated with all financial aspects of Series 5000 offerings, this flexible General Ledger was designed to meet all the requirements of managerial accounting. It captures basic accounting transaction data and stores it in a comprehensive data base for use throughout the organization. It facilitates financial reporting of the hospital's activity for each accounting period and provides for ad hoc analysis and reporting of trends, exception reporting and development of static and flexible budgets.

**Benefits**

- Provides flexibility in the production of standard and ad hoc reports via report writer
- Assures a complete and up-to-date General Ledger and Chart of Accounts via online inquiry and posting
- Provides complete audit trail reporting for control of data capture activities
- Improves access to information while reducing data entry activity through integration with other Series 5000 applications
- Enhances management analysis via annual, YTD or MTD inquiry detail within any month for budgeted vs. actual

**Features**

Budget

- Supports the interactive entry and revision of budget data
- Allows percentage increases or decreases to be applied to historical, actual or budget amounts
- Displays current fiscal year-to-date by accounting period
- Provides upward summarization into responsibility groups
- Produces budget reports showing the data contained in the system for the entire fiscal year
- Generates budget reports which compare current budget vs. current actual, current budget vs. prior actual or current actual vs. prior actual

Journal Entry

- Allows daily input
- Automatically posts recurring journal entries
- Allows posting to multiple accounts with one entry
- Provides automatic reversal of accruals
- Maintains a file of recurring entries
- Provides flexibility in closing and reopening of accounts
- Provides comprehensive editing functions to verify the logical integrity, accuracy and completeness of all input transactions including matching debits to credits

Chart of Accounts

- Flexible, user-specified account structure
- Flexible account numbering system for control and sub-account identification
- Multi-divisional structure allows separate and consolidated divisional reporting
- Source of entry is clearly identified on detail reports

Audit and Reporting

- Permits running of all reports with month-to-date financial information any time during the month via pre-closing option
- Identifies assets, liabilities, revenue and expenses via management overview reports
- Provides prior and current year account history for variance study
- Reports current and year-to-date budget vs. actual
- Provides comparative balance sheet and income statements
- Links with the budget component to allow budget comparisons in appropriate reports
- Expresses variances in both dollar amounts and percentages
- Provides complete audit trail of each transaction for determination of entry origin, accounts affected, debit and credit amounts, date and the person who entered the transaction
- Supports the reporting of upward summarization of the individual cost center, multiple departments and entire hospital
- Details account summaries of interface entries (payroll, accounts payable, patient accounting)

**Report Highlights**

- Powerful, easy-to-use report writer allows user definition of report formats
- Daily and year-to-date or monthly transaction journals
- Journal entry list and re-cap
- Detail, comparative and summary trial balance
- Operating statements
- Monthly department expense summary
- Department budget vs. actual showing variance by amount and percentage

## *Hospital Information System*

# RADIOLOGY INFORMATION MANAGEMENT

With its diverse group of functions, Spectrum's Radiology Information Management offering provides information quickly and efficiently through a series of menu-driven screens or optional bar code readers.

Designed specifically for radiology needs, the Radiology Information Management product delivers its capabilities through a fully integrated set of functions that serve a wide variety of routine tasks. These functions help manage the radiology department by streamlining each activity–from a doctor's request to results reporting–allowing a smooth transition from procedure to procedure for patient and staff alike.

This wide-ranging functionality makes staff more productive while providing the power needed to manage diverse tasks, organize the department, streamline costs and maximize resources.

**Benefits**
- Improved productivity due to ability to better plan resource needs
- More efficient results reporting
- Saves film library management time
- Better cost control through automatic charge capture

**Features**

Order/Result Management
- Entry of individual or profile requests
- Updates and corrections
- Canned text and/or free-form entry of results
- Collects ACR data about interesting results for reference and teaching files
- "Confidential" classification of results reporting
- Professional fee charge capture at result verification

Appointment and Resource Management
- Automatic or specific appointment scheduling
- Dynamic scheduling for optimum resource utilization
- Outpatient pre-booking
- Rescheduling of an individual appointment or blocks of appointments
- Printing of required forms for use at department and patient locations
- Improved overall radiology department resource scheduling

Patient Tracking
- Monitoring of individual patient's procedures and progress
- Review of complete and incomplete procedure reports
- Information on excessive waiting time, overdue and no-show patients
- Information on the quantity and quality of film used
- Charge capture of technical and miscellaneous fees

Film Library Management
- Simplified loan and copy request procedures
- Bar code identification for film loans and borrowers
- Multiple retrieval options including medical record number, file name or patient name
- Master and insert folder processing using bar code labels
- Film tracking system

**Report Highlights**
- Borrower delinquency
- Film
  - Location
  - Utilization
- Completed Procedures by
  - Patient
  - Shift
- Daily schedule
  - Log
  - Pull List
  - Transportation
- Maintenance
- Incomplete procedures
- Patient services summaries for
  - Patient
  - Radiologisit
  - Resource
  - Technologist
- Cancelations
- Rescheduling
- Result management
- Statistics
- Utilization
- Flashcards
- Transport slips
- Appointments

SERIES 5000

SPECTRUM

*Hospital Information System*

## PHARMACY MANAGEMENT SYSTEM

The Series 5000 Pharmacy Management System provides a complete hospital pharmacy management and information application that operates as an integral part of a hospital-wide information system.

This application provides the hospital with the ability to define an operating environment which includes pharmacists, pharmacy technicians, physicians, nursing personnel, and unit secretaries. The system's flexibility allows extensive screen customizations, pathway changes, printout control, and the ability to make processing option changes online without the need for programming changes.

**Benefits**

- Saves time and increases accuracy by integrating medication therapy into the hospital's total clinical function
- Simplifies training and increases productivity through menu-driven order entry/order maintenance and easy-to-use screen flows
- Reduces cost of expensive programming changes through the use of Hospital Profile Table options
- Reduces errors and liability because clinical screening alerts medical, nursing and pharmacy staff to potential allergic reactions, drug interactions and therapeutic duplication
- Provides Pharmacy managers with extensive management reporting needed for monitoring revenue, expense, workload and controlled substances

**Features**

- Provides online order and patient profiles including allergies and other clinical data
- Allows for multiple levels of security
- Integrates to the Series 5000 Financial Core or interacts with other hospital ADT systems
- Screens, labels, notices and reports are easily customized
- Uses mnemonics, standing order, common medication, and quick order functions to produce efficient order entry flow. Allows numerous other options for order entry/maintenance
- Investigational drugs may be defined in the formulary including monograph-type information and authorized prescribers. The system edits for an authorized prescriber and may display the pre-defined monograph screen
- Accommodates for floor stock order entry with automatic replenishment lists
- Supports online drug order scanning for use in drug recalls or concurrent review
- Contains specialized order entry features such as combination orders, sliding scale insulin, and medication-specific screens
- Supports order entry from nursing stations, satellite pharmacies, and/or a central location
- Performs automatic clinical edits including:
  - Drug-to-drug interaction screening
  - Drug-to-allergy screening
  - Duplicate order checking
- Uses flexible automatic stop orders including online expiring orders displays and reports
- Produces online billing at time of dispensing or via MAR reconciliations
- Processes unit dose medication, IV piggyback and large volume IV solution orders including complex and total parenteral nutrition admixtures
- Provides automated drug formulary updates
- Extensive documentation available

**Report Highlights**

- Anticipated Medication Activity
- Cart Fill Lists
- Clinical Edits
- Controlled Substance Orders
- Controlled Substance Proof-of-Use
- Current Order Summary
- Discharge Planning Worksheet
- Expiring Orders Summaries
- Floor Stock Replenishment Lists
- Historical Order Summary
- IVPB Manufacturing
- Labels
- LVP Manufacturing
- Medication Administration Records
- Notices
- Online Drug Scan
- Revenue and Expenses–Daily/Monthly/Quarterly
- Unverified Orders
- Update Analysis (cart fill)
- Workload Statistics

**Hardware**

The Series 5000 Pharmacy Management System is designed to run on IBM S/370™ architecture.

For more information, please contact:

Spectrum Healthcare Solutions
Marketing Communications Department
150 Motor Parkway
Hauppauge, NY 11788
800-642-7663

## *Hospital Information System*

## ORDER ENTRY/ANCILLARY RESPONSE

The Order Entry/Ancillary Response module of the Series 5000 Clinical Core offers an online, integrated system with broad-based functionality and maximum flexibility. Order Entry/Ancillary Response supports clinically-oriented order processing, ancillary response and results reporting. These functions are supported with a complete message communication, online reference information and patient profile. Integration with the Series 5000 Financial and Clinical Cores provides the hospital with a powerful tool to support efficient clinical services within the constraint of a complex fiscal environment.

**Benefits**

- Provides clinicians with quick access to patient data at the bedside, nursing station, any terminal in the hospital or physician's office
- Provides ancillary department technicians with an automated mechanism for tracking workloads and transmitting results
- Eliminates repeated telephone calls to ancillary departments through online tracking of order status and results

**Features**

Order Entry

- Single or multi-provider support
- Provides multiple pathways for entering an order
- Creates orders in sentence format
- Allows online order review, correction, deletion, duplicate order check-ins and data editing to prevent incomplete orders and an order session print
- Provides branching capabilities during order entry to check existing orders, requisitions, results, notes or patient profile information
- Discontinues all orders and resumes after surgery or transfer to another service
- Supports order entry and ancillary response for the following departments:
  - Core Laboratory
  - Microbiology
  - Transfusion Services
  - Dietary
  - Cardiology
  - Respiratory Therapy
  - Physical Therapy/Occupational Therapy
  - EEG/EMG
  - Radiology
  - Nursing
  - Nuclear Medicine
- Offers user-friendly streamlined screens with light pen technology
- Activates PRN orders
- Displays order status:
  - Active, in progress, unverified, complete, discontinued or current by department and time frame
- Assigns and tracks the status codes for orders and occurrences
- Provides online specimen board for real-time status of specimen collection by department

Ancillary Response

- Multi-option ancillary worklists allow efficient acknowledgement of tests, collection of specimens or entering of results
- Reference data stored in the Services Data Base assists in specimen collection, patient preparation and results interpretation
- Results are available in multiple formats: single or cumulative, by department and time frame or on scrolled display in reverse chronological order
- Allows for correction, verification and entry of preliminary and final results
- Requisitions are generated on scheduled day of service
- Displays prior versions of corrected results
- Ability to enter additional charges or credits for a test
- Charges can be passed during order entry, acknowledgement, preliminary or final resulting

Physician Functions

- Physician-oriented functions are available to the physician from any terminal in the hospital
- Online notice of unsigned and recommended orders are presented at sign-on
- Electronic signature allows physicians to sign verbal or telephone orders or confirm recommended orders
- Ability to create personal order sets, add to his/her patient list and display house census and patient location
- Ability to access all other reference and message functions provided in the system

Message Functions

- Bulletin Board delivers messages to any level of hospital staff at sign-on with ability to print messages.
- Post-up notice communicates patient information among health care providers.
- On-Call Schedule provides display and print functions for a particular service, individual or specific date

SERIES 5000

SPECTRUM

*Spectrum Healthcare Solutions*

## OPERATING ROOM SYSTEM

Designed to help operating room managers make the most efficient use of their resources, Spectrum's Operating Room System automates the full range of perioperative activity. Starting with presurgery case scheduling, the Operating Room System streamlines departmental information flow and becomes an online working partner in the everyday details of running an operating room.

Operating Room System provides information that makes peak efficiency easier to achieve and supports "business-wise" decisions in the operating room. With Spectrum's Operating Room System, an OR supervisor has the necessary tools to address issues of cost identification and reduction, patient acquisition and quality of care, and physician satisfaction and retention.

**Benefits**
- Improved productivity due to better room utilization and maximized resource allocation
- Quantifiable cost savings through lost charge capture and product standardization
- Decision support through more accurate and timely management reporting
- Better case management through efficient and conflict-free scheduling practices
- Smooth productive case preparation facilitated by online surgeon preference cards and availability of specific information
- Quality medical care can be delivered since staff can attend to primary patient care responsibilities rather than paperwork

**Features**

Scheduling
- Automatic or specific appointment scheduling
- Accommodates centralized or localized scheduling
- Conflict resolution on surgeon, room, equipment, and scheduled resources
- Online surgeon privileges
- Can reserve block time for surgeons, procedures or specialties

Case Prepping
- Maintains basic procedure sheets and surgeon preference cards
- Global item replacement feature makes product substitution or replacement quick and easy
- Generate customized case supply picklists for separate inventory locations
- Picklists and surgery check sheets generated on cue from daily schedule
- Preference card creates billing template for increased charge capture and accurate supply usage tracking

Case History
- Over 20 standard reports with data filtering to allow reporting of subsets of the total data base
- Provides room and staff utilization analysis
- Automates surgery department daily log
- Case data entry by exception from record created by scheduling and case prepping transactions
- Powerful report writer available for ad-hoc reporting

Inventory Control
- Tracks and stores information needed to maintain a perpetual inventory system in the OR
- Maintains supply inventory for multiple asset locations within the OR
- Calculates current supply inventory value for each asset location
- Generates recommended orders based on supply consumption
- Forecasts supply shortfalls for upcoming cases

**Report Highlights**

Daily Documents
- Surgery Log
- Daily OR Utilization Report
- Daily Turnover/Time Report
- Patient Abstract
- Statistical Summary Report

Period Reports
- Case Mix Analysis
- OR Revenue
- Supply Usage
- Physician/Case Time Statistics
- OR Room Utilization
- Delay Report
- Patient Acuity Level/Procedure Class
- OR Patient Type by Day of Week
- Infection Control Classification
- Quality Assurance Log
- No Tissue Report
- Anesthesia Type
- Statistical Summary
- Surgeon Activity Count
- Procedure Count
- Product Line Analysis
- Additional Staff Activity Report
- Surgeon/Resident/MA/CRNA Log
- Staffing Analysis
- Cancellation Report

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## *Hospital Information System*

## ON-LINE CHARTING

The On-Line Charting module of the Series 5000 Clinical Core is an online entry of a patient's response to medical and nursing interventions and clinical data, such as vital signs, intake and output, height and weight, neuro checks and unit tests. This module supports generic charting functions in nursing practices.

On-Line Charting is integrated with Series 5000 Registration/Admission and the Order Entry/Ancillary Response and Care Planning modules of the Clinical Core.

**Benefits**
- Maximizes clinical time through easy, quick and user-friendly functions, thereby increasing nurse productivity and direct patient care hours
- Offers efficient retrieval of charted data by any health care provider
- Improves accuracy and legibility of documentation

**Features**
- Each charting entry is stamped with date and time of entry, signature of the entering person and date and time of occurrence
- Ability to correct notes and capture signatures, date and time, with online retrieval of previous entries
- Charting for single or multiple patients
- Charted data is available online in tabular or text format
- Provides charting by key entry or use of light pen

Charting Functions
- Vital signs include temperature, pulse, respiration, blood pressure and central venous pressure
- Also includes height, weight, circumference, neurologic checks and the Glasgow Coma Scale
- Unit tests include sugar and acetone, occult blood, chemistry and hematocrit strips, urine specific gravity and urine pH
- Intake & Output includes amount and type of intake and output which is automatically calculated by shift and daily totals and a daily fluid balance
- Narrative notes allow for unformatted free text notes
- SOAPE notes allow charting by standard SOAPE format with these categories: subjective, objective, assessment, plan and evaluation
- Transfer notes allow entry of specific data such as date and time of transfer, destination, reason, mode of transfer, personal belongings, patient's clinical condition and medications.

**Report Highlights**
- 24-hour Charted Data Summary
- Intake & Output–Daily
- Intake & Output–7 day
- Vital Signs–Daily
- Vital Signs–7 day

**Hardware**

The Series 5000 On-Line Charting is designed to run on IBM S/370™ architecture.

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## *Micro-Based Solutions For Hospital Pharmacies*

## NUTRITIONAL ASSESSMENT SYSTEM

The micro-based Nutritional Assessment System from Spectrum Healthcare Solutions provides the practicing clinician with a comprehensive nutritional screening, assessment and monitoring program. The system facilitates nutritional decision making for all types of patients without confining the user to pre-defined algorithms. The user does not have to alter his/her standard of practice to meet the software requirements.

The Nutritional Assessment System provides customization for tailoring to the policies, nutritional philosophies and standards of practice of each hospital. The user can arrange the sequential order of data input, define normal laboratory values and set error trapping limits specific to the institution. Assessment and monitoring parameters may be added to or deleted from the program as required.

The system supports the screening, assessment and monitoring of adult, pediatric and neonatal patients. Additionally, sixty concurrent sets of evaluation are provided for each patient and methodology with trend analysis through graphing patient data.

**Benefits**
- Increases productivity of the clinical nutrition department
- Facilitates nutritional screening of patients
- Supports nutrition technician utilization by providing both individual and batch patient data collection and assessments
- Allows practitioner evaluation and interpretation of results
- Adapts to user-specific format and requirements via inherent customization capabilities
- Simplifies data collection, assessment, monitoring, consult generation and documentation of nutrition support therapies
- Supports the documentation of quality assurance activities of clinical nutrition personnel
- Automatically calculates a wide variety of monitoring parameters for more complete patient assessments
- Simplifies patient progress trend analysis through graphic support of monitoring parameters
- Calculates Enteral, Parenteral and combined Enteral-Parenteral formulation requirements based on derived values
- Supports the use of the hospital's formulary Enteral and Parenteral products
- Prints a user-defined consult that includes nutritional status assessment and recommendations for therapy
- Decreases the time to produce consult recommendations with user-defined text
- Provides a menu-driven format for ease of use and rapid data entry
- Backed by system support and clinical consultation services

**Features**
- Includes options for screening comprehensive, abbreviated and pediatric assessment along with two user-defined nutrition assessment methods
- Performs pediatric and adult nutritional assessment functions
- Categorizes patient data automatically by major organ system for ease of direct clinical evaluation
- Calculates nutritional risk indices, such as Hospital Prognostic Index, Prognostic Nutritional Index, Nutritional Risk Index and Catabolic Index
- Supports the determination and monitoring of Enteral, Parenteral and combined Enteral-Parenteral nutrition therapies
- Estimates a patient's nutritional requirements by a variety of methods including age, weight, basal energy expenditure, activity and stress factors
- Multiple sets of data (up to 60) may be recorded and compared on any single patient
- Any numerical data may be graphed against the defined normal range to determine progress trends
- Contains a spreadsheet function for customizing carbohydrate, fat, protein, branch chain amino acid and volume requirements
- Generates a user-defined consult using word processing features
- Stores patient data history files for recall
- Allows for user update of patient data and consult generation
- Generates data collection forms developed during customization
- Generates printout of all patient data, assessments, calculations and recommendations for hard copy files
- Supports the on going education and training of clinical nutrition staff
- Generates worksheets for full nutrition support team review and evaluation of patient progress
- Accommodates CGA compatible monochrome video systems such as portable computer LCD screens

## *Hospital Information System*

## MEDICAL RECORDS MANAGEMENT

The Series 5000 Medical Records Management system provides a fully functional, integrated, online system of records and utilization management that is key to the survival and profitability of health care providers. The system's approach discreetly defines requirements for the capture and processing of patient and third party information for accurate billing procedures resulting in optimal reimbursement. In addition, the system maintains the patient's medical record to facilitate chart location, tracking doctor deficiencies and corresponding with all relevant outside agencies.

**Benefits**
- Ensures data accuracy through fully edited online screen flows
- Supports bar code technology which streamlines chart tracking
- Eliminates redundant data collection through fully integrated applications
- Supports concurrent review which enhances cash flow
- Accommodates hospital-defined criteria facilitating unique processing requirements

**Features**

Chart Deficiency
- Identifies missing or incomplete data
- Accommodates multiple chart volumes/components
- Tracks multiple physician/nursing unit deficiencies
- Allows partial or full deletion of deficient items
- Provides a worklist for each chart by physician
- Generates user-defined suspension letters
- Adds/subtracts days deficient
- Online deficiency inquiry by multiple criteria

Chart Correspondence
- Supports request for patient information from multiple sources
- Processes fees online
- Generates worklists and letters to requestors

Chart Location/Reservation
- Tracks all charts with associated medical record number
- Supports multiple locations/volumes within department and hospital
- Reserves charts on provider waiting list
- Includes bar code capabilities for issue and return

Case Mix Management
- Monitors proper DRG assignment
- Generates statistics to maximize cost control
- Integrates financial/clinical data
- Provides flexible reporting options
- Maximizes cost control efforts
- Eliminates duplicate data entry
- Automatically captures required financial/clinical data
- Analyzes MTD/YTD hospital DRG profile
- Calculates Case Mix Index figures
- Indicates DRG cost/length-of-stay variances
- Analyzes hospital DRGs by service/physician
- Reports DRG status of active/discharged billed accounts
- Compares actual charges vs. DRG reimbursement, indicating profit/loss
- Calculates total cases/patient days per DRG
- Analyzes resource utilization per DRG by UBC category
- Provides a flexible reporting methodology to supplement standard reporting functions

Review Management System
- Demographic information comes from Registration/Admission to eliminate re-keying
- Allows concurrent review from pre-admission through discharge
- Based on hospital criteria, automatically selects patients for review
- Automatic selection of patients needing discharge planning
- Produces listing of patients meeting specified criteria including admission within specified days of last discharge, need for review every X number of days, when length of stay exceeds specified percentage of DRG length of stay, when charges exceed specified percentage of DRG reimbursement and when charges exceed a specified dollar amount

**Report Highlights**
- Abstracts Completed
- Case Mix Analysis–DRG Summary By Physician
- Case Mix Worklist–Billed Accounts
- Chart Deficiency Notice Of Incomplete Records
- Chart Location Incomplete Record Sign-out
- Correspondence Delinquent Requests
- DRG Assigned
- Incomplete Record
- Medical Record Deficiency Summary
- Medical Records Not Coded
- Missing Elements

- Daily Cash Posting By Payor Code
- Monthly Bad Debt Cash Posting
- Pre-Collections
- Third Party Logs
- Update Accounts Receivable (MTD and YTD)

**Hardware**
The Series 5000 Financial Core is designed to run on IBM S/370™ architecture.

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SERIES 5000

## *Hospital Information System*

## FINANCIAL CORE

The Financial Core is the base product on which to build a complete hospital-wide information system. Series 5000 provides Registration/Admission and Patient Accounting as fully integrated, online, interactive products meeting user needs for function-rich, flexible operations.

### REGISTRATION/ADMISSION

Registration/Admission streamlines procedures and improves bed management providing users with accurate, timely patient information. This product eliminates duplicate data entry as it records patient data in the Master Patient Index (MPI), making all information immediately accessible to appropriate personnel now and during future visits.

**Benefits**

- Improves patient relations by facilitating patient registration/admission
- Improves bed management through fully edited nurse station displays and inquiries
- Increases personnel productivity through streamlined, concise flows
- Ensures data accuracy through online edits and displays
- Promotes discharge planning through fully integrated applications

**Features**

Master Patient Index

- Allows name update and addition of alias and guarantor
- Searches by name, Social Security or medical record number
- Maintains up to nine aliases per patient
- Retains up-to-date patient demographics

Information Desk

- Provides quick access to patient information
- Confidentiality flag restricts access of certain patient information

Pre-admission/Pre-registration

- Gathers demographic/case/guarantor/financial information
- Retains data until admission or cancellation
- Identifies overdue admissions
- Creates accounts in Patient Accounting
- Post charges and payments prior to admission
- Generates transaction-based and user-defined notes

Admission

- Converts pre-admits to active inpatients
- Accommodates conversions between inpatients, outpatients and Emergency Room patients
- Utilizes the mother's data for newborns
- Links multiple births to the mother's account
- Employer table for consistency of data
- Adheres to "Birthday Rule" for guarantor when patient is under eighteen
- Provides alternate guarantor when patient is 65 or older and married
- Easily accommodates physicians not on permanent staff
- Accommodates leave of absence
- Handles observation patients
- Prints patient record/face sheet and plate
- Updates census statistics upon cancellation
- Bills cancelled admissions as outpatient account

Transfer

- Accommodates bed moves, changes in service and physician updates
- Updates bed status and account statistics/charges
- Handles pending transfers
- Accommodates bed swaps
- Tracks patients on leave of absence
- Utilizes dynamic work lists for monitoring beds

Census

- Inquiries on all beds (occupied/unoccupied)
- Inquiries by patient name or physician
- Final census captures room charges
- Accommodates multiple bed status indicators

Abstracting

- Integrates with Patient Data Base
- Serves clinical, administrative and financial interests
- Captures DRG-related information concurrently
- Accommodates online inquiries

Outpatient Registration

- Allows online inquiry, update and cancellation
- Provides quick outpatient registration
- Handles Emergency Room DOE Registrations
- Discharges outpatients and Emergency Room patients automatically, if desired
- Facilitates registration of multiple outpatient types
- Converts outpatients to recurring status
- Generates multiple visits
- Prints daily recurring patient work list
- Allows verification by date and department

Special Registration

- Supports non-patient specimen billing
- Establishes institutional accounts

Nursing Station Data Base

- Creates, updates and deletes rooms and beds
- Displays bed history work list
- Updates bed accommodations

**Report Highlights**

- Visit Summary
- Admissions/Discharges
- Clinic Activity
- Census
- Births
- Daily, monthly and yearly statistics for inpatients, outpatients and emergency patients

*Hospital Information System*

## DRUG DATA SERVICE

There are thousands of trade and generic drugs available in the marketplace. Obviously, no pharmacy uses all of these and, with the frequency of new offerings, keeping current is a nearly impossible task. The Drug Data Service, offered by Spectrum Healthcare Solutions to all Series 5000 Pharmacy Management System clients, provides and maintains a Drug Master File for over 18,000 drug products. Subscribers to the service have access to this data from which they can maintain their hospital-specific Drug Master File.

Drug product data is received from First DataBank and enhanced specifically for use with Spectrum's Series 5000 Pharmacy Management System. In addition to this data, the Drug Data Service provides users with interaction/allergy codes and drug interactions.

For one annual fee, subscribers receive yearly licensing of data for hospital use, quarterly updates on magnetic media and support. In addition, subscribers receive three micro-based clinical products at no additional charge–Kinetics, Nutritional Assessment and Adverse Drug Reaction (Fact Sheets are available for additional information on these offerings).

**Benefits**

- Provides timely and accurate data
- Reduces manual file maintenance
- Reduces the opportunity for clinical screening errors
- Flexible
- Provides average wholesale pricing information

**Features**

- Provides data to support clinical screening of allergies, drug interactions and therapeutic duplicates
- User-friendly update application
- New drug items routinely added
- Serves as online drug information resource

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*Hospital Information System*

## DISCHARGE PLANNING

The Discharge Planning module of the Series 5000 Clinical Core assists the hospital in maximizing the discharge planning process from pre-admission to discharge. Its multi-disciplinary approach offers comprehensive and individualized patient care management in a rapidly changing hospital environment. Discharge Planning is integrated with the Series 5000 Clinical Core Order Entry/Ancillary Response, Care Planning, On-Line Charting and Series 5000 Registration/Admission modules.

**Benefits**

- Provides early identification of patients requiring discharge planning
- Decreases length-of-stay and maximizes DRG reimbursement
- Maximizes human resources (involved in the process) through multi-disciplinary approach to discharge planning
- Monitors justification for acute care services and facilitates early discharge

**Features**

- User-defined criteria for profiling consulting departments, risk factors, social/functional assessment categories and criteria, discharge instructions and reference data
- Discharge planning risk factors can be identified at preadmission/admission
- Risk factors and social/functional assessment triggers the discharge planning process and adds the patient's name to the appropriate consulting worklist
- Ability to create a discharge plan per consulting department for each patient
- Ability to chart notes against the discharge plan
- Ability to request any consulting department for a discharge planning evaluation
- Individualized patient discharge instructions including medication instructions, clinic follow-up visit information and community agency referrals
- Inter-agency referral summary
- Display and print functions for all components of the system
- Ability to enter discharge orders
- Discharge planning functions for physicians

**Report Highlights**

- Daily and Cumulative Tracking
- Overdue Evaluations
- Worklist by Consulting Department
- Reference Data (Clinic/Office/Community Agencies, Medication and Discharge Instructions)
- Active and Cumulative Discharge Plan
- Inter-agency Referral Form
- Discharge Summary

**Hardware**

The Series 5000 Discharge Planning module is designed to run on IBM S/370™ architecture.

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SERIES 5000

SPECTRUM

*Hospital Information System*

# COST ACCOUNTING

Since the Prospective Payment system was signed into law, it has revolutionized the way hospitals look at costs. Budgeting and standard cost procedures provide hospitals with a set of tools for controlling costs. The Cost Accounting system automates these tools to quickly reveal departures from planned or expected results. Cost Accounting provides a mechanism for the build-up of costs of hospital services to whatever level the hospital wishes–from individual cost components to procedures to standard treatment patterns.

**Benefits**

- Reduces clerical efforts and errors in developing/maintaining standards
- Improves analysis of actual, budgeted and standard costs
- Ensures a balance between cost control requirements and quality patient care
- Provides an efficient and flexible method of costing hospital services

**Features**

Flexible Budgeting

- Supports the development of a case mix forecast for estimating volume
- Allows user-defined manning tables and related cost schedules
- Calculates all variable/fixed expenses for estimated volume
- Translates dollar amounts into rates based on planned activity units
- Calculates budget allowances and department rates for procedure and standard treatment pattern costing

Procedure Performance Allowance/Productivity

- Computes standard costs from actual numbers of procedures performed
- Integrates with General Ledger to reflect actual procedures at standard cost
- Compares actual costs to standard and flexible budget amounts to determine variances
- Compares actual statistics to earned statistics to compare for FTE productivity analysis

Variance Analysis

- Performs materials, labor and overhead variance analysis
- Allows management to better control costs by providing detailed, timely comparisons

Simulation

- Provides flexibility in identifying the effects of changes in prices, costs or planned case mix
- Allows easy access to treatment methodology information for simulation
- Allows "what if" questions for proper decision-making

Case Mix

- Established standard treatment patterns for patients upon admission
- Compares actual procedures performed to standard treatment patterns
- Maintains patient demographic/summary data after discharge for analytical reporting

Product Line Reporting

- Establish product lines by institution for profitability
- Variable margin and gross margin calculations by product line (with the use of the Report Writer)

**Report Writer**

- Offers user-defined reporting for product lines
- Can be used for any module on the machine
- Easily links files to merge data on one report
- Can create RPGIII code for any standard report

**Hardware**

The Series 5000 Cost Accounting module is designed to run on IBM S/370™ architecture.

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## *Hospital Information System*

## CARE PLANNING

The Care Planning module of the Series 5000 Clinical Core provides a multi-option user-defined tool for creating, updating, documenting, monitoring and evaluating plans of care. This module provides the capability to create individualized care plans. Care Planning is integrated with Series 5000 Registration/Admission and the Order Entry/Ancillary Response, On-Line Charting and Discharge Planning modules of the Clinical Core.

**Benefits**
- Provides nurses with electronic tools to assist with planning, implementing, documenting and evaluating patient care
- Improves patient communication among health care providers
- Provides a mechanism for monitoring standards of patient care
- Facilitates the quality assurance process by measuring projected target dates against actual completion dates
- Increased care plan quality and content improve the level and quality of patient care

**Features**
- Provides the ability to develop care plans using one or all of the following approaches:
  - Nursing Diagnoses
  - Standard Care Plans
  - Clinical Care Problems
  - Teaching Plans
  - Standards of Practice
  - Discharge Plans
  - Temporary Problems
  - Quick Key Entry
  - Problem List from Past Visit
- Nursing stations can profile care plans specific to their specialty or use generic care plans for multiple patient use
- Ability to select any care plan type for the patient and modify, as required, to create an individualized plan
- Ability to add other profiled care plan types to a new or existing care plan
- Ability to create free-form care plan
- Nursing interventions may be flagged as active orders
- Provides category or keyword files to facilitate the search for a specific care plan
- All care plan entries maintained with date and name of user
- Projected dates for problem resolution provide a measure against actual completion date
- Ability to chart against a problem at any time
- Ability to display active/cumulative and final care plans with notes charted against the care plan
- Care plan documents may be printed and reprinted at any time
- Reports notify management of patients without care plans, problems not resolved by their target dates and charting that is overdue

**Report Highlights**
- Clinical
  - Active Care Plan
  - Cumulative Care Plan
  - Final Care Plan
  - Care Plan Overdue Problems
  - Care Plan Overdue Charting
- Clerical
  - Care Plan by Type and Category
  - Care Plan by Keywords
  - Outcome File by Keywords
  - Profiled Care Plan
  - Keyword List
  - Category List

**Hardware**
The Series 5000 Care Planning application is designed to run on IBM S/370™ architecture.

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SPECTRUM

*Hospital Information System*

# APPOINTMENT SCHEDULING

The Series 5000 Appointment Scheduling System fully integrates with the Series 5000 Registration/Admission and Patient Accounting offerings. It provides a comprehensive tool for tracking clinics, providers, rooms, equipment and other resources used by outpatients. The application supports both keyboard and light pen data entry.

**Benefits**
- Increases personnel productivity through comprehensive online planning
- Optimizes resource utilization through flexible, user-defined parameters
- Promotes coordinated work effort by allowing for inquiry and resource maintenance

**Features**

Patient Identification
- Provides rapid patient inquiry by name or medical record number
- Integrates with MPI to eliminate redundant data entry

Profiling/Resource Maintenance
- Online profiling and resource maintenance
- Defines resources for O/P care flexibility
- User-defined profiles for each resource
- Offers standard or special schedules per resource
- Profiles visit type and number of patients to be seen
- Allows overbooking and day/time maintenance

Appointment Scheduling
- Supports comprehensive online appointment activity including check-in, check-out, cancellation, change and follow-up
- Displays past/present/future patient appointments
- Lists all available appointments by month and day
- Provides appointment criteria and instructions
- Prints appointment slips/medical record chart and X-ray pull lists
- Interactive conflict checking and consecutive scheduling

Inquiry and Census
- Performs online inquiries on all resources and profiles
- Displays status of patients and appointments with update capability
- Inquires on Doctor Data Base for provider assignment
- Utilizes ICD-9-CM Data Base for diagnosis assignment
- Maintains and lists all medical referral information
- Displays resource calendar/census/ appointment detail

Resource Statistics Summaries
- Provides online utilization statistics on total visits/visit type/financial class/referral source
- Provides comprehensive executive summaries on all resources
- Generates month-to-date and year-to-date totals and comparisons

**Report Highlights**
- Appointment List by Resource
- Blank Schedule Display
- Cancellations
- Clinic Activity
- Daily Appointment List for Medical Records
- General Appointment Slips
- Monthly Outpatient Visit Statistics
- O/P Clerk Registration Summary
- Outpatients Visits by DX Code/by Generic DX Code
- Statistics by Provider

**Hardware**

The Series 5000 Appointment Scheduling application is designed to run on IBM S/370™ architecture.

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**SERIES 5000**

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## *Micro-Based Solutions For Hospital Pharmacies*

# ADVERSE DRUG REACTION

To provide better patient care while helping hospitals meet JCAHO requirements, Spectrum Healthcare Solutions offers the Adverse Drug Reaction system. Designed for the IBM Personal System/2™ series and AT microcomputers, adverse drug reactions can be identified and reported with the system facilitating analysis of trends associated with identification, documentation and evaluation.

This trend analysis could result in the development of various surveillance or intervention strategies. This process can also be utilized to evaluate various intervention strategies.

The Adverse Drug Reaction system centralizes and standardizes the organization's adverse drug reaction reporting process. This program supports data collection and recording in an easy to follow format and automatically produces the Food and Drug Administration's adverse drug reaction reporting form.

**Benefits**
- Facilitates centralization and standardizes the adverse drug reaction reporting process
- Automatically produces Food and Drug Administration form 1639
- Helps the pharmacist provide post-marketing surveillance of new drugs
- Assists the pharmacy in meeting JCAHO requirements on adverse drug reaction monitoring and reporting
- Facilitates the documentation of adverse drug reactions
- Provides a mechanism for monitoring the safety of drug use
- Promotes the active surveillance and trend analysis of adverse drug reactions
- Stimulates the development of educational programs regarding adverse drug reactions
- Helps the pharmacy meet the American Society of Hospital Pharmacists' Guidelines on adverse drug reaction monitoring and reporting
- Assists the pharmacy in incorporating their adverse drug reaction program into on going quality assurance activities

**Features**
- Powerful relational database program
- Preserves patient and physician confidentiality through user-defined report formats
- Prints adverse drug reaction reports in the Food and Drug Administration format
- Supports user-defined adverse drug reaction reports for analysis
- Contains multiple word processing fields to record patient history, relevant tests, laboratory evaluations, reasons for drug uses, etc.
- Supports recording of the patient's medical and medication history, a description of the suspected adverse drug reaction, the temporal sequence of the event, any remedial treatment required, any sequelae, the results of dechallenge and rechallenge (if any), alternative etiologies and the review of the pharmacy and therapeutics committee
- Provides selection fields to group reported adverse drug reactions according to consequences, to whom it was reported and which body systems were affected. Any dechallenge or rechallenge can also be recorded
- Provides three levels of context sensitive help. The first is always viewed on the screen for general screen movements. The second is specific to the data field the user is presently accessing. The third gives more information about the option, screen and field presently being accessed
- Allows recording of multiple drugs suspected of causing the adverse reaction
- Supports recording of all concomitant drug therapy associated with the adverse drug reaction
- The system has a built-in sample data base to promote faster orientation and training in the use of the program
- The system has multiple features which are designed to decrease data entry time and reduce accidental recording of duplications
- Supports on-screen viewing of report formats and final reports. These powerful options provide the capability to preview reports prior to printing. Print can be italicized, compressed or bolded. Reports can be saved and exported to other programs
- Measures adverse drug reaction incidence rates over time

**Hardware Recommendations**
- IBM PS/2™ or AT™ microcomputers with 640 K of RAM
- Less than 1 MB of hard disk for system files and approximately 1 MB for 100 Adverse Drug Reaction reports
- IBM-DOS version 3.0 or higher (except 4.0)
- IBM Proprinter – 80 and 132 column. (132 column recommended)

## *Hospital Information System*

## ADS PLUS RELEASE 2.0

Organizations are turning to online application solutions to meet the heavy demands for increased productivity and resource control. With the increasing scarcity and cost of highly trained management information systems (MIS) professionals, it is more difficult for these departments to create their own applications.

Spectrum's Application Development System Plus (ADS Plus) provides application development facilities and tools for creating and maintaining information system building blocks. MIS personnel and application users can participate in the development, tailoring and enhancement of applications to meet individual environment requirements.

ADS Plus was developed to increase the flexibility, adaptability and ease of use of online data base systems. It assists in both application development and execution. ADS Plus is an architecture and set of programs with proven dependability and designed for health care environments.

ADS PLUS Release 2.0 is the second offering designed to operate on IBM 43XX or 30XX or ES/9000 processors capable of running either VSE/SP, VSE/ESA or MVS/370 or MVS/XA or MVS/ESA, CICS/VS and DL/1 DOS/VS or IMS-VS/DB and SQL/DS or DB2.

**Benefits**

- User participation in the development, implementation and maintenance of application functions
- A comprehensive set of programming tools facilitates screen and report formatting, data editing, application logic definition and testing
- Centralized control, access and definition of all data
- Interactive testing and debugging
- Extended 3270 attribute support (including seven colors)
- Use of MVS/XA 31 bit addressing by selected components

**Features**

- A Screen Compiler and Screen Manager eliminates the need for writing traditional programs to gather data from terminal users or display information to terminal users
- A Print Format Compiler and Print Manager lets the user print messages and reports by simply defining the format and source of any variable data values they contain
- VSAM exits
- National Language Support
- Double Byte Character Support
- A Formatted Record Description Compiler and Communication Manager provide communications with applications running in Personal Work Stations
- A Data Collection List (DCL) Compiler and Processor lets the user define a DCL to perform the following functions:
  - Ensure completeness of the data gathering task at each application stage
  - Control sequence within and between various application stages
  - Verify data before making changes to an application database
- A Command Stack for each user contains a list of commands to be run. Some of these commands will:
  - Display screens
  - Execute programs
  - Activate DCLs
  - Access databases
  - Print reports and messages
- A Supervisor controls the application logic flow by consulting the Command Stack
- A Symbol Table for each user provides a data interface area for all components
- A Data Manager controls access to VSAM, DL/1 or IMS and DB2 or SQL/DS databases
- An Edit Function edits and manipulates data entered into the application via a screen or data file

**Exclusive Features**

- Contains a non-conversational data collection list language which supplies logic capability and enables more transactions to be executed using less virtual storage
- Supports multiple GATHER/SCATTER commands
- A global symbol table is provided containing installation constants easily accessible to all applications
- Supports LU2 program to program connections in character mode
- Improved command linkage
- The methods used by DOSYMBOL to maintain the name pool reduce the CPU time required to insert and delete entries
- Code and date translate tables are in print formats
- Field level HELP on fixed edit tables displays accepted values
- Command level programming interfaces

## *Hospital Information System*

# ACCOUNTS PAYABLE

The Series 5000 Accounts Payable system was designed to provide financial managers with tools to control disbursement activity. Payables activity is controlled via simple-to-exercise options. Accounting periods, account structure and the timing for check production are user-determined. This product offers full online facilities including data entry with full validation of all transactions as well as inquiry into the vendor and invoice data bases. The system provides immediate access to all data needed to control payment and integration.

**Benefits**
- Allows prolonged cash retention while taking advantage of discounts
- Provides complete security and audit trail reporting for total accounting control
- Supports management efforts to control payables through comprehensive reporting
- Simplifies patient refunding and employee reimbursement practices

**Features**

Vendor Processing
- Identifies 1099 information at vendor and invoice level with appropriate reports
- Analyzes year-to-date payments to vendors and patients to whom refunds were paid for remittance advice
- Provides vendor check and remittance advice
- Provides temporary, permanent, deactivated, alphabetical and numeric vendor listings
- Integrates with the Series 5000 Materials Management System to allow for a shared vendor file and "paperless" receiving

Invoice Processing
- Allows online entry of daily voucher activity, manually written checks, cash disbursements and daily file maintenance
- Provides gross, discount and net figures
- Prints summary of cash requirements for open items, approved items and vouchers for a designated period by date of disbursement
- Supports hold or stop payments
- Reports a given day's accounts payable status

Checks
- Ability to combine multiple remittances on a single check
- Ability to process patient refunds from the Series 5000 Patient Accounting module
- Check register provided for checks just written

Automatic General Ledger Posting
- Automatic posting of all Accounts Payable journal entry transactions to the Series 5000 General Ledger

**Report Highlights**
- Abbreviated Vendor List
- Accounts Payable Journal
- Aged Open Payables by Payee
- Bank Reconciliation
- Cash Requirements by
  - Company
  - Due Date
  - Payee
- Check Register
- Check Register by Period
- Expenditure Analysis Report
- Journal Voucher's for Accounts Payable
- Recurring Payables
- Vendor Lists

**Hardware**

The Series 5000 Accounts Payable offering is designed to run on IBM S/370™ architecture.

For more information, please contact:

Spectrum Healthcare Solutions
Marketing Communications Department
150 Motor Parkway
Hauppauge, NY 11788
800-642-7663

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Profiles from the Field

Sketches

WINNING NEWS FROM SPECTRUM HEALTHCARE SOLUTIONS

# Managing High Outpatient Volumes in Manhattan:

## And Recovering $1.5 Million More Each Month

*Situated on 114th St., just two city blocks from Columbia University, 1340-bed St. Luke's/Roosevelt Hospital Center boasts 150 years of service.*

**Managing high outpatient volumes in an inner city environment can be a formidable task, even for the most prepared hospital. How formidable? Consider annual emergency room visits of up to 165,000. Another 400,000 outpatient visits at an array of clinics. With a mission of this magnitude, you begin to understand one institution's pressing need to manage its outpatient services. That institution is St. Luke's/Roosevelt Hospital Center, located on Manhattan's Upper West Side. Their outpatient system of choice: The Spectrum™ Series 5000 Hospital Information System.**

***"When the decision was made to implement the system,"* says Richard P. McGrail, vice president and CIO for St. Luke's/ Roosevelt, *"we knew that one of the initial benefits we'd realize was to bring our clinics closer together. When you implement a system like this, it gives you the opportunity to essentially come up with one way of conducting business, one way of interviewing patients, and one way of doing registration. You establish a common information base that spreads out through the entire outpatient population."***

**In addition to better managing its outpatient services, St. Luke's/Roosevelt began to realize tangible benefits in another vital area of the hospital: Cash Flow. According to Mr. Michael S. Elliott, executive vice president, corporate services, the hospital gained much more than information management through the**

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*more...*

## *Micro-Based Solutions For Hospital Pharmacies*

## SPECTRUM'S KINETICS SYSTEM

Computer technology is advancing the utilization of clinical pharmacokinetics in the design of drug dosage regimens. Spectrum's Kinetics System is an innovative computerized pharmacokinetic dosing system designed to improve patient care.

Spectrum's Kinetics System is a micro-based program that takes patient-specific information (age, sex, weight, height, disease history and current drug therapy) and uses it to recommend individualized drug regimens for patients receiving drugs with a narrow therapeutic index. The system simulates the pharmacokinetic properties of the drug as it is absorbed, distributed and eliminated through the patient's body. Clear documentation is provided. Spectrum's Kinetics System stores and sorts data for easy retrieval, patient follow-up, inhouse analysis and research analysis. The result is enhanced patient care and cost savings to the hospital.

**Benefits**

- Simplifies pharmacokinetic analysis
- Improves accuracy of drug delivery
- Justifies pharmacokinetic service by efficiently increasing workflow and generating a service proposal
- Eases and shortens training curve via built-in tutorials and a completely referenced user manual
- Reduces need for trial and error dosing and minimizes the procurement of serum drug levels
- Saves clerical time by generating consults and graphs via the computer
- Saves clinician time by performing time-consuming calculation tasks and producing computerized consults
- Encourages the clinician/user to consider all available pharmacokinetic variables
- Reduces the opportunity for calculation errors

**Features**

- Accommodates multiple analysis techniques, including linear regression, non-linear regression and Bayesian
- Comprehensive documentation manual which includes primary literature citations
- Patient Data Statistics Program allows statistical analysis of kinetic data
- Utilizes patient population parameters
- Accommodates realistic user-defined variables
- Stores data for future recall
- Performs drug therapy calculations
- Allows user to determine drug level analysis method
- Allows for partitioning of the drug therapy course into separate time intervals for varying patient conditions
- Simulates drug absorption, distribution and elimination through the patient's body
- Simulates various routes of administration, varying product formulations, non-compliant regimens and other altering pharmacokinetic factors including disease states and drug therapy
- Fast-track program for aminoglycoside antibiotics provides rapid data entry, analysis and graphics
- Performs single or multiple drug level analysis obtained in different dose intervals or at non-steady-state conditions
- Provides error warnings
- Capable of printing graphic illustrations in different styles and colors
- Calculates, displays and modifies the following parameters:
  - Therapeutic levels
  - Toxic levels
  - Rate constants for central and peripheral compartments
  - Serum level vs. time curve
  - Apparent volume of distribution
  - Half-life of elimination
  - PO and IV bioavailability
  - Body mass
- Offers drug preparatory programs including:
  - Amikacin
  - Digoxin
  - Gentamicin
  - Lidocaine
  - Lithium
  - Phenobarbital
  - Phenytoin
  - Procainamide
  - Quinidine
  - Theophylline
  - Tobramycin
  - Valproic Acid
  - Vancomycin

**Hardware Recommendations**

- IBM Personal System/2®, XT™ or AT®
- PC-DOS or MS-DOS (release 3.0 or higher)
- 640K RAM
- CGA graphics adapter
- Hard disk
- Parallel port
- Dot matrix printer (utilizing Epson control codes)

For more information, please contact:

Spectrum Healthcare Solutions
Marketing Communications Department
150 Motor Parkway
Hauppauge, NY 11788
800-642-7663

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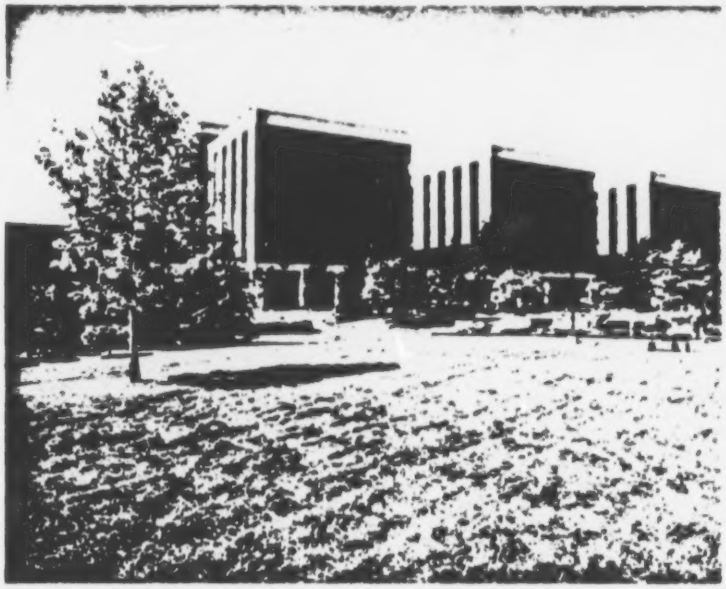
SERIES 5000

Profiles from the Field

# Sketches

WINNING NEWS FROM SPECTRUM HEALTHCARE SOLUTIONS

## Vendor + Customer Teamwork = A Smooth Installation



*722-bed Strong Memorial Hospital of the University of Rochester Medical Center serves 1.5 million residents of the Finger Lakes Region in upper New York State.*

**No two hospital information system implementations are quite alike. They involve hospital-specific requirements that make them distinctive in their own right. One key to implementing successfully in this challenging environment is when a vendor is flexible enough to adapt to changing client requirements. However, what can almost guarantee a successful implementation is when a customer takes ownership over a program. When a customer transcends the accepted vendor/customer relationship and establishes one that is built on realistic, mutually focused objectives. A relationship better known as TEAMWORK.**

**This level of teamwork was achieved most recently at Strong Memorial Hospital in Rochester, New York. Strong Memorial is the 722-bed primary teaching hospital of the University of Rochester. As the major referral center for the Finger Lakes Region of Upstate New York, Strong Memorial offers many advanced medical treatments, technologies and facilities not available elsewhere in the 11-county region. Says John P. Wynne, Jr., senior director of administration and finance for Strong Memorial Hospital: *"The implementation process is both a technical and a user experience. The hospital information system should not be construed as just a black box that gets delivered, but as a strategic investment; a tool that helps users do their jobs. The focus is on the user."***

**On July 7, 1990 Strong Memorial Hospital went 'live' on the Spectrum™ Series 5000 Financial Core, Release 88.3, IRT 7. The event could best be described as a true joint effort. Spectrum account director Suzanne Walsh recalls, *"The people at Strong took real ownership over this project and made it their own. That's what made all this possible."***

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The management team at Strong supported its investment by assigning a large number of resources to the program to work alongside Spectrum's Field Operations personnel. Says D. Jerome Powell, Strong Memorial project director: *"We had very good user representation on this project, and a big commitment of key players out of hospital operations."* Thus, a significant user presence was apparent from the start, ensuring that hospital needs were accounted for every step of the way. Both Paula Elliott and Terry Fraser, key Spectrum Field Operations managers, agree that Strong Memorial is a strategic site for Spectrum because it represents success with both inpatient and outpatient modules in full production at a major teaching institution in New York State.

> **"With this product as the foundation, we hope to weave information systems technology into the very fabric of how the hospital does business."**

According to Wynne, the installation represents more than just a chance to streamline patient registration and accounting functions. It provides an opportunity to introduce a new culture into the daily operation of the hospital: an information management culture. *"With this product as a foundation,"* says Wynne, referring to the Series 5000, *"we hope to weave information systems technology into the very fabric of how the hospital does business."*

Another factor for success, according to Powell, is applying an incremental approach to the entire program. While some vendors and customers can often become overwhelmed with the scope of the big picture, one way to remain focused is to take the project one step at a time. And at the end of those steps, to employ complete and comprehensive testing. Powell explains. *"We took the posture that we would not proceed to any milestone without first completing the previous milestone. We did things in a clear, sequential order. That was very important. And good, fundamental testing made a big difference. Good unit testing. Integrated systems testing. And volume testing. A hospital can be successful by committing to thorough system testing."*

Of course, finding the right system with the right fit is essential. For Strong Memorial Hospital, that system was Series 5000. Wynne believes, *"The foundation of the product is sound. It is on a platform that is strategic and will be around for awhile. It allows a large institution to be somewhat flexible in how it approaches the use of the product, and provides benefits of which a large, diverse, teaching hospital can take advantage. The system will allow us to be more productive in our administrative operations and, therefore, allow us to reduce administrative costs."*

According to Strong Memorial staffers, the system meets three major objectives in helping the hospital remain fiscally sound:

- providing administrative and financial information that is clean, accurate and able to respond to rapidly changing reimbursement arrangements
- improving efficiency with greater online access
- enabling the hospital to look to new initiatives, such as patient care systems.

> **"We had very good user representation on this project, and a big commitment of key players out of hospital operations."**

*"We have reached a new beginning with our systems,"* says Wynne, *"and we should be proud of it."*

*"While the initial work with Series 5000 is going well,"* says Powell, *"the major successes will*

# Sketches

*be long term. What we now have is a modern, flexible system that will not only get the job done in terms of supporting hospital users, but will now enable Strong Memorial to expand with new functions during this decade.”* David Agostinelli, executive assistant to Mr. Wynne, believes that *“this system's achievement sets the foundation in place for future expansion into patient care systems, where real benefits and qualitative gains begin to accrue, particularly through systems like order entry / results reporting, automated charting, nurse care planning and numerous other clinically related functions.”*

*“This system puts Strong Memorial in a unique position,”* said Powell. *“Very few hospitals in the United States have such modern, state-of-the-art data processing systems that keep pace with rapidly changing health care needs.”* Wynne added, *“From my conversations with key people around the country, we are in the top 1% of hospitals with successes like we've just realized.”*

The implementation involved phasing out the hospital's 12-year old Technicon system and cutting over to the new Series 5000 Financial Core. What resulted was a smooth conversion. Powell credits the success of the entire project to great teamwork among the hundreds of staff members throughout the hospital who first selected and learned the system, then joined with Spectrum staff members to implement it. Wynne concurs. *“It's not at all that remarkable that the system implementation was successful, when you consider the hard work and dedication of hundreds of Strong Memorial staffers. They, together with Spectrum's install teams, made it all happen. Because of careful planning and focused preparations, we expected to be successful. The good news is that it was actually better than we ever expected. Everyone did an outstanding job.”*

> ***"We expect to be able to reduce receivables by 5 to 6 days within the first year, thus recovering anywhere from $3 to $4 million more in outstanding receivables."***

Powell concluded with words of advice for peer institutions considering similar information systems investments that ring true with a clear yet positive pragmatism: *“Hospitals shouldn't expect all features and functions to be up and operational from day one. In other words, they have to take a realistic approach on what needs to be installed first. Teaming up with the vendor in defining these milestones is what ensures a smooth installation.”*

And will the Series 5000 provide a tangible return on investment? At Strong Memorial Hospital, Mr. Wynne seems to think so. *“We expect to be able to reduce receivables by 5 to 6 days within the first year,”* he said, *“thus recovering anywhere from $3 million to $4 million more in outstanding receivables.”*

For more information on Spectrum solutions for your hospital information system needs, please call 1-800-642-7663, or write:

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Hauppauge, NY 11788

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Profiles from the Field

# Sketches

WINNING NEWS FROM SPECTRUM HEALTHCARE SOLUTIONS

## The Australian Connection

### Spectrum is Up Down Under

AUSTRALIA
Perth
Adelaide
Melbourne
Sydney
Brisbane

*The five hospitals operated by the Australian Department of Veteran Affairs (DVA) are located in five different cities, separated by as much as 2,000 kilometers.*

Spectrum Healthcare Solutions is truly a company with global perspective. It's a well-known fact that the Spectrum™ Series 5000 hospital information systems have been providing information solutions for health care professionals throughout the United States and Canada, but now Spectrum's horizons have been broadened even further as the five hospitals operated by the Australian Department of Veteran Affairs (DVA) became the first to install an Australian version of Spectrum's Series 5000 Clinical Core in "the land down under."

The program is being orchestrated by Spectrum's Australian marketing associate, PAXUS Health, Ltd., who has been working with the DVA group of hospitals for some time; DVA hospitals utilize IBM processors in each location. The arrangement is somewhat unique because the five hospitals involved are located in different cities, separated by as much as 2,000 kilometers. Yet, because of their Spectrum solutions, they are becoming more of an integrated organization. Known as "Repatriation General Hospitals" (RGH), the group consists of RGH Concord in Sydney; RGH Greenslopes in Brisbane; RGH Heidleberg in Melbourne; RGH Daw Park in Adelaide; and RGH Hollywood in Perth. Together, these five hospitals total nearly 2,000 beds.

The Australian DVA hospitals were using the IBM® APMS (Australian Patient Management System), which is a modified

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*more...*

# Sketches

version of IBM's Patient Management System in the U.S., but the majority of their clinical departments were operating with manual systems. To meet their expanding needs, DVA worked with PAXUS to develop a strategy for advanced clinical functions.

> **"We've been able to create more timely information, and we now have a greater ability to schedule activities..."**

*"They were looking for a mainframe solution that would satisfy their future integration requirements, rather than a departmental system,"* said Heather Psaltis, PAXUS senior application specialist. *"They were already familiar with Spectrum's structure and support, and were very comfortable in knowing that not only would they have first line support from PAXUS in Australia, but also second line support from Spectrum in the States. They considered Spectrum as the proven solution, particularly with the Clinical Core applications,"* she said.

The Australian medical environment is slightly different from the U.S. in that physicians are required to enter their own orders. The nursing staff may enter Nursing or Dietetic orders only. Another difference: DVA hospitals are Government operated, and are not as concerned with the accounting and billing procedures so vital to an American hospital. But they are concerned with efficiency and communications, which have both been upgraded with the expanded functionality of the Australian version of Spectrum's Series 5000.

Dr. Denis Smith, chief executive at RGH Concord, recalled the hospital's selection of a Spectrum system. *"We wanted something that would assist the clinician... nurses, medical staff and the scientific staff... something that would make their work more efficient, so they could get on with the tasks they were trained to do. We haven't fully achieved it yet, but we are starting to. The system requires a certain level of training, which we're addressing reasonably well — but the more practical problem we face is that as we develop a greater dependency on the system, more people want to use it, and access to terminals is starting to become critical,"* he said.

Dr. Smith continued, *"We've been able to create more timely information, and we now have a greater ability to schedule activities, particularly utilization of scarce resources such as the Radiology Department. We've always found that moving patients through Radiology was one of the limiting steps in processing their diagnostic workup. But now we're doing it more efficiently, and we're starting to see the benefit of that through reduced length of stay. Statistical ranges may vary, but across the board, we've probably reduced the length of stay by half a day since the advent of the system."*

Materials Management is also becoming more sophisticated at DVA hospitals. *"Prior to Spectrum, some of the hospitals were either using home-grown software or completely manual systems,"* said Scot Rogers, support center manager for PAXUS. *"We've developed a catalog which allows users to perform multi-search functions throughout the materials management system. The user can search a catalog by name, manufacturer's reference, part number or colloquial reference, thus allowing easier identification of the item,"* said Rogers.

> **"... across the board we've probably reduced the length of stay by half a day since the advent of the system."**

This catalog will eventually be available in all DVA hospitals using the Materials Management Application.

# Sketches

At RGH Greenslopes, Doug Meredith, director of information systems, reports a significant improvement in the Radiology Department. *"We have moved up the time for urgent x-ray results to be available to the clinician in the ward from an average of 24 hours to about four hours. General Radiology requests are available far more quickly than they were before,"* said Meredith. *"But there are additional benefits, too. I think that in the past, many hospitals didn't have sufficient information about the way they themselves operated. But now, with the Spectrum system, we have the capability to investigate in detail the operations of our hospitals to make supported decisions as to where efficiencies can be gained."*

Sue Rosenberger, the PCS coordinator at RGH Greenslopes, offered some additional observations about the Spectrum system. *"With Dietetics, for example, people are finding that the message is much clearer than before. It's also relatively easy for them to learn the system. People don't really require much training — they can almost train themselves among their colleagues,"* she said.

*"In Radiology,"* Rosenberger continued, *"the Spectrum system has tightened up procedures, so it is now clear who ordered which services, and when. But perhaps the best part about the system is that it has opened up a whole new arena of interest for our users. Many of them are learning more about computer systems on their own, and these multiple skills will be good for their futures individually."*

At the present time, each of the DVA hospitals is currently in some phase of implementation with Spectrum Series 5000 applications:

RGH Concord is "live" with APMS Radiology, Order Entry Results/Reporting, Appointments (RSM), Dietetics, and half of the Microbiology Department is up.

RGH Greenslopes is "live" with APMS and Appointments. Order Entry Results/Reporting is "live" in Radiology, Nursing and a "porterage" transport function with the allied health areas to be implemented in the near future. They are also in the process of implementing Materials Management.

RGH Heidleberg is "live" with APMS and Appointments. Order Entry is "live" with Dietetics and is in the process of implementing Radiology.

RGH Hollywood is live with APMS, Appointments and Materials Management. They are currently evaluating the Clinical Core, and early reports are encouraging.

RGH Daw Park has APMS, Appointments and Materials Management.

Australia takes great national pride in providing the best possible health care for their citizens, and the five DVA hospitals are prime examples of this philosophy. In the coming months, as other Spectrum applications are implemented, the level of patient care at these hospitals is likely to reach a new mark in efficiency and timeliness, which will enhance their national commitment and raise the quality of life in Australia... an admirable pursuit, for sure.

To learn more about how a Spectrum information system can enhance operations at your institution, please call 1-800-642-7663 or write:

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**SPECTRUM**
HEALTHCARE SOLUTIONS

## Master Agreement Dated as of ____________________, 19___

---

| | |
|---|---|
| Spectrum Healthcare Solutions | |
| 150 Motor Parkway | |
| Hauppauge, New York 11788 | |
| ("Spectrum") | ("Customer") |

Spectrum will provide the computer related products and services described in the Schedules selected below.

| | |
|---|---|
| ☐ Schedule 1 SOFTWARE LICENSE | ☐ Schedule 5 NATIONAL DRUG DATA FILE |
| ☐ Schedule 2 SOFTWARE INSTALLATION AND TRAINING | ☐ Schedule ____________________ |
| ☐ Schedule 3 SOFTWARE SUPPORT | ☐ Schedule ____________________ |
| ☐ Schedule 4 MANAGEMENT SERVICES | |

Unless expressly provided otherwise in the above Schedules, all provisions in this Master Agreement shall also apply to all selected Schedules. Each Schedule contains additional provisions that are specific to the transaction contemplated by the Schedule. Collectively, the provisions of this Master Agreement and the Schedules selected above, including all attached Exhibits, are referred to as the "Agreement".

THE PARTIES ACKNOWLEDGE THAT THEY HAVE READ THIS AGREEMENT, understand it, and agree to be bound by all of its provisions. This Agreement constitutes the complete and exclusive statement of the agreement between the parties, and supersedes all prior oral and written communications concerning the subject matter of this Agreement.

IN WITNESS WHEREOF, the parties have executed this Agreement on the date(s) shown below.

| | |
|---|---|
| SPECTRUM HEALTHCARE SOLUTIONS | CUSTOMER |
| BY: ____________________ | BY: ____________________ |
| PRINTED NAME: ____________________ | PRINTED NAME: ____________________ |
| TITLE: ____________________ | TITLE: ____________________ |
| DATE: ____________________ | DATE: ____________________ |

## 1. DEFINITIONS

"Acceptance Date" means the date on which a Software Module is deemed accepted as determined under Section 6 of Schedule 2.

"Customer's Facility" means the location specified in Exhibit 1 to Schedule 1.

"Documentation" means the copies of the user software documentation relating to the Software provided by Spectrum to Customer.

"Effective Date" means the date specified on the top of the face page of the Master Agreement.

"Equipment" means the computer hardware equipment identified in Exhibit 1 to Schedule 1.

"Final Acceptance Date" means the Acceptance Date of the last Software Module accepted.

"License" means the license to use the Software Assets granted to Customer in Schedule 1.

"Load Date" means the date on which the machine executable computer code comprising a Software Module resides in the Equipment.

"Nonconformity" means any instance where a Software Module materially fails to operate in conformance with the Documentation.

"Operating Software" means that software which is required to operate or is supplied with the Equipment.

"Software" means the copies of the computer programs identified in Exhibit 1 to Schedule 1.

"Software Assets" means the Software and Documentation, including all copies provided to or prepared by Customer and all Enhancements (as defined in Section 1 of Schedule 3) and Nonconformity corrections provided by Spectrum.

"Software Module" means each of the Software modules identified in Exhibit 1 to Schedule 1.

"System" means the combination of the Software Assets provided to Customer by Spectrum under this Agreement and the Equipment and Operating Software.

"Third Party Products" means the Equipment and Operating Software.

"Third Party Supplier" means each person who manufactures the Equipment or Operating Software.

"Warranty Period" means the period as defined in Section 5 of this Master Agreement.

## 2. TERMS OF AGREEMENT

This Agreement shall become effective as of the Effective Date and shall continue for as long as any Schedule to this Agreement remains in effect.

## 3. PAYMENT TERMS

(a) Spectrum shall invoice Customer for the charges, at the times and in accordance with the provisions specified in this Agreement, provided that Spectrum shall not invoice Customer for any charge that under the provisions of this Agreement is due upon execution. Invoice charges shall be described in reasonable detail, and Spectrum shall furnish such additional supporting documentation as is reasonably requested by Customer. Customer shall pay all invoices in full and without deduction at the times specified in Exhibit 1 to the Master Agreement or in the Schedules, and if not so specified, within thirty (30) days after the invoice date. Customer is responsible for all taxes and duties based upon amounts payable hereunder (exclusive of taxes based upon the income of Spectrum), and upon Customer's ownership, use or possession of the Software Assets. If Customer is exempt from certain taxes, Customer shall provide Spectrum with a certificate of exemption or comparable document issued by the applicable taxing authority. Customer shall reimburse Spectrum in accordance with Spectrum's standard travel policy for all actual and reasonable travel expenses incurred by Spectrum to render services under this Agreement.

(b) Unless otherwise specified by Spectrum in writing, all payments made to Spectrum under this Agreement shall be mailed to Spectrum at the following address:

Spectrum Healthcare Solutions
P.O. Box 1213
Department 871
Newark, N.J. 07101-1213
Attn: Accounts Receivable

(c) Late payments shall bear interest at a rate equal to the lesser of (a) one and one half percent (1-1/2%) per month, or (b) the highest rate of interest allowable under applicable law. If Customer disputes, in good faith, any charge specified in a Spectrum invoice ("Disputed Charge"), Customer shall so notify Spectrum in writing within five (5) days after receiving Spectrum's invoice. Customer shall have thirty (30) days commencing upon Spectrum's receipt of Customer's notification to resolve the Disputed Charge. Payment of all late payment charges, if any, will be suspended during such thirty (30) day period. If the Disputed Charge is not resolved during such thirty (30) day period, each party may exercise all rights and remedies available to it to resolve the Disputed Charge.

## 4. WARRANTY AND INDEMNIFICATION AGAINST INFRINGEMENT

(a) Spectrum warrants that it has full right to grant the License provided pursuant to Schedule 1 to Customer and that Customer's use of the Software Assets will not infringe upon the proprietary rights of any third party. Spectrum shall, at its expense, defend Customer against each third party lawsuit claiming that Customer's use of the Software Assets within the scope of the License infringes upon a U.S. patent, copyright, trade secret or other proprietary right of any such third party. Spectrum shall pay all costs, damages and reasonable attorneys' fees finally awarded to any such third party in an infringement action, provided Customer promptly notifies Spectrum in writing of the filing of the lawsuit, and gives Spectrum sole control of the defense and all related settlement negotiations.

(b) If an infringement claim relating to the Software Assets has occurred or in Spectrum's opinion is likely to occur, Spectrum, at its option and expense, may: (i) procure for Customer the right to continue using the Software Assets; (ii) replace the Software Assets with functionally comparable software; (iii) modify the Software Assets to make them noninfringing in a manner that does not impair the Software Assets' functionality; or (iv) elect to have Customer continue its use of the Software Assets and to defend Customer against any claim which has occurred or does occur as provided in Section 4(a) of this Master Agreement. If Spectrum informs Customer that none of the foregoing alternatives is reasonably available to Spectrum, Customer shall cease using and return to Spectrum the infringing Software Assets and Spectrum shall refund to Customer the unamortized portion of the License fees paid for the alleged infringing Software Assets, computed by amortizing the Software Assets evenly over a five (5) year period commencing upon the Effective Date. Spectrum also shall refund the unamortized portion of any maintenance and support fees prepaid by Customer.

(c) Spectrum shall have no obligation, whether under Sections 4(a) or 4(b) of this Master Agreement or otherwise, to defend Customer against or to pay costs, damages or attorneys' fees for any third party infringement claim caused by (i) Customer's modification of the Software Assets, (ii) Customer's failure to use all enhancements or updates to Software Assets offered by Spectrum, (iii) Customer's failure to use the Software Assets in accordance with the License, or (iv) use by Customer of any non-Spectrum software or computer hardware equipment, other than the Equipment, with the Software Assets. Customer shall, at its expense, defend Spectrum against any third party lawsuit claiming that use of the Software Assets, as modified by Customer or used by Customer other than in accordance with the License, infringes upon a U.S. patent, copyright, trade secret or other proprietary right of any such third party. Customer shall pay all costs, damages and reasonable attorneys' fees finally awarded to any such third party in an infringement action, provided Spectrum promptly notifies Customer in writing of the filing of the lawsuit, and gives Customer sole control of the defense and all related settlement negotiations.

(d) Customer warrants to Spectrum that it has the right to disclose all information and materials made available to Spectrum in the course of performing this Agreement and shall defend and indemnify Spectrum against each third party lawsuit against Spectrum resulting from a breach by Customer of the foregoing warranty.

(e) This section states the parties' entire obligation to each other for infringement.

## 5. SOFTWARE WARRANTIES

(a) Spectrum warrants that during the "Warranty Period" defined in this Section 5(a), each Software Module will be free of Nonconformities. The warranty for each Software Module shall commence upon, and continue for thirty (30) days after delivery of each Software Module, provided that if Spectrum provides Installation Services (as defined in Section 2 of Schedule 2), the warranty shall commence upon the "Warranty Start Date" specified in Exhibit 1 to the Master Agreement and continue throughout the "Warranty Duration" specified in Exhibit 1 to the Master Agreement (the "Warranty Period"). If Customer notifies Spectrum in writing during the Warranty Period that a Software Module does not function as warranted, Spectrum, at its expense, shall use its best efforts to confirm the existence of and correct the reported Nonconformity.

(b) The foregoing warranty does not apply to the failure of the Software to perform as warranted because of any of: (i) the conditions set forth in Sections 4(c)(i) through 4(c)(iv) of this Master Agreement; or (ii) the malfunctioning of any non-Spectrum software used by the Customer with the Software Assets; or (iii) the malfunctioning of any computer hardware equipment, including the Equipment, used by the Customer with the Software Assets.

(c) Spectrum hereby assigns and agrees to assign to Customer all assignable warranties regarding any Third Party Products received by Spectrum from Third Party Suppliers, including warranties against proprietary infringement. Customer understands, however, that Spectrum does not warrant the Third Party Products in any manner, and that Customer's sole and exclusive warranty rights and remedies regarding the Third Party Products, including rights and remedies in the event a Third Party Product gives rise to an infringement claim, shall be against the Third Party Suppliers and not Spectrum.

(d) THE WARRANTIES EXPRESSED IN THIS SECTION 5 AND IN SECTION 4(a) OF THE MASTER AGREEMENT ARE IN LIEU OF, AND SPECTRUM HEREBY DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, REGARDING THE SOFTWARE ASSETS, THIRD PARTY PRODUCTS OR OTHER SERVICES OR PRODUCTS PROVIDED UNDER THIS AGREEMENT INCLUDING, BUT NOT LIMITED TO, ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

## 6. LIMITATION OF LIABILITY

(a) Customer may recover direct damages against Spectrum up to the limits set forth below, if after reasonable efforts Spectrum fails to make the Software operate as warranted in Section 5(a) of this Master Agreement, provided that the foregoing shall not diminish any cure rights granted to Spectrum or supersede any exclusive remedies expressly provided under this Agreement.

(b) Except for Spectrum's indemnification responsibilities under Section 4 of this Master Agreement and for personal injury or damage to property caused solely by Spectrum's gross negligence or willful misconduct, Spectrum's maximum liability to Customer with respect to the transactions contemplated by this Agreement, regardless of the form of action, shall be limited to the charges actually paid by Customer under this Agreement for the portion of the Software Assets to which such liability relates. In no event will Spectrum be liable to Customer for (i) any damage, loss or expense arising from performance or nonperformance of any Third Party Products, (ii) lost profits, incidental or consequential damages, even if Spectrum has been advised of the possibility of such damages, or (iii) except for Spectrum's indemnification responsibilities under Section 4 of this Master Agreement, for any third party claim against Customer concerning the Software Assets.

(c) Without limiting the foregoing, Customer agrees that the use of the System by Customer or Customer's personnel for any purpose related to patient care cannot be controlled by Spectrum and must not be substituted for Customer's professional skill and judgment. Customer acknowledges that Spectrum is in no way responsible for any pharmacological, medical, legal or similar information contained in, entered into, or used in connection with the System and Customer independently will verify the accuracy and completeness of such information. Customer shall be solely responsible and liable for Customer's patients, including responsibility for personal injury or loss of life.

(d) The remedies set forth throughout this Agreement constitute Customer's sole and exclusive remedies and Spectrum's entire liability in the event of a breach and/or termination of this Agreement or any Schedule to this Agreement.

## 7. PROPRIETARY INFORMATION

(a) Customer acknowledges that all work products or ideas developed by Spectrum pursuant to this Agreement for Customer which may be subject to patent, copyright, trade secret or other proprietary protection shall be owned by Spectrum and licensed to Customer as Software in accordance with the terms and conditions of this Agreement.

(b) To the extent either party's employees are exposed to confidential information belonging to or in the custody of the other party, such persons shall take the same steps to protect such information as they are required to take to protect their employer's confidential information of like kind. If requested, a party shall demonstrate to the other party that its employees, consultants and agents are obligated to it in writing to protect such confidential information; provided, however, that Customer shall not provide access to source code to its consultants or agents without the prior written permission of Spectrum. The foregoing does not require either party to protect any information (i) currently in the public domain or rightfully in the possession of such party, (ii) subsequently entering the public domain for any reason other than a party's failure to meet its obligations under this Agreement, (iii) rightfully acquired by a party without obligation of confidentiality or (iv) independently developed by a party without use of the other party's confidential information.

(c) This Agreement will not prevent Spectrum from providing to other customers services and products that are identical or similar to services and products furnished to Customer under this Agreement.

(d) Upon termination or expiration of any Schedule, each party will cease using and return to the other all proprietary information provided pursuant to such Schedule belonging to the other party then in a party's possession, and thereafter continue to preserve the confidentiality of such information until it ceases to be proprietary to the owner thereof.

(e) Customer's obligations under this Section 7 are in addition to its obligations to protect confidential and proprietary information under Section 5 of Schedule 1.

(f) The provisions of this Section 7 shall survive the termination or expiration of this Agreement.

## 8. HHS AUDIT RIGHT [42 U.S.C. 1395X (V)]

Spectrum agrees that until the expiration of four (4) years after furnishing services and/or products pursuant to this Agreement, Spectrum shall make available, upon written request of the Secretary of the Department of Health and Human Services (the "Secretary"), or upon request of the U.S. Comptroller General, or any of their duly authorized representatives, this Agreement and the books, documents and records of Spectrum that are necessary to certify the nature and extent of the costs for which Customer seeks reimbursement. Spectrum further agrees that if Spectrum carries out any of the duties of this Agreement through a subcontract with a value or cost of ten thousand dollars ($10,000) or more over a twelve (12) month period, with a related organization, such subcontract shall contain a clause to the effect that until the expiration of four (4) years after the furnishing of such services pursuant to such subcontract, the related organization shall make available, upon written request to the Secretary, or upon request to the U.S. Comptroller General, or any of their duly authorized representatives, the subcontract, and books, documents and records of such organization that are necessary to verify the nature and extent of such costs.

## 9. EXPIRATION AND TERMINATION

Each Schedule may be terminated only for the reasons and only in accordance with the termination provisions set forth in such Schedule and as provided in Section 11(f) below. Termination of a Schedule shall not constitute termination of other Schedules or this Agreement unless expressly so provided in such terminated Schedule. Notwithstanding the foregoing, termination of Schedule 1 to the Master Agreement (the Software License) shall constitute termination of all Schedules to this Agreement, unless otherwise agreed to by the parties. Neither expiration nor termination of this Agreement or any Schedule shall impair a party's then accrued rights, obligations, liabilities and remedies; provided, however, that except for an action arising out of a breach by Customer of the provisions of Section 7 of this Master Agreement or Section 5 of Schedule 1, neither party may bring any action, regardless of form, arising out of this Agreement more than two (2) years after the cause of action arose.

## 10. CUSTOMER RESPONSIBILITIES

In order to enable Spectrum to more effectively perform its obligations under this Agreement, Customer shall:

(a) within ten (10) days of the Effective Date designate a "Customer Representative" who shall be authorized to make decisions, approve plans and grant requests on behalf of the Customer in connection with Spectrum's performance;

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(b) provide Spectrum with access to the System and Customer's Facility, together with adequate working space, at all reasonable times to enable Spectrum to perform its obligations; and

(c) fully cooperate with Spectrum by making available to Spectrum information regarding Customer, its resources and personnel reasonably required by Spectrum to perform its obligations.

## 11. MISCELLANEOUS

(a) None of the terms of this Agreement shall be deemed to be waived or amended by either party unless such waiver or amendment is in writing and signed by both parties, and recites specifically that it is a waiver of, or amendment to, the terms of this Agreement. The failure of Spectrum or Customer in any one or more instances to insist upon strict performance of any of the terms or provisions of this Agreement shall not be construed as a waiver or relinquishment, to any extent, of the right to assert or rely upon any such terms or provisions on any future occasion.

(b) In the event that a court of competent jurisdiction holds that a particular provision or requirement of this Agreement is in violation of any applicable law, each such provision or requirement shall be enforced only to the extent it is not in violation of such law or is not otherwise unenforceable and all other provisions and requirements of this Agreement shall remain in full force and effect.

(c) This Agreement is deemed to have been entered into in the State of New York, and its interpretation, its construction, and the remedies for its enforcement or breach are to be applied pursuant to, and in accordance with, the laws of the State of New York, exclusive of its choice of law rules.

(d) Neither party shall be held responsible for any delay or failure in performance under this Agreement arising out of any cause beyond its control or without its fault or negligence, provided that the foregoing shall not excuse either party from its obligations under this Agreement to protect the other's proprietary information.

(e) Customer may, upon written notice to Spectrum, assign this Agreement in whole to any party, other than a competitor of Spectrum, acquiring substantially all of Customer's assets or with which Customer merges or consolidates and who, in either event, agrees in writing to assume each and every obligation conferred upon Customer under this Agreement. Customer may not otherwise assign this Agreement without Spectrum's prior written consent and any attempted unauthorized assignment shall be void. In the event of a proper assignment, this Agreement shall be binding upon and inure to the benefit of the parties and their successors and assigns.

(f) This Agreement may be terminated immediately and in its entirety without further rights, obligations or liability owing or due by either party, except as otherwise provided in this Section 11(f), should Customer apply for and be denied the authority to proceed with its information systems plan, such denial being asserted by appropriate state or federal agencies in the administration of any Certificate of Need or other capital expenditure authorization law, statute or regulation with which Customer must comply. Customer will pay all fees or charges for services rendered and products provided by Spectrum up to the date Spectrum receives notice, in writing, from Customer that this Agreement is terminated for the foregoing cause. Customer shall also be responsible for and shall pay any unamortized sales and administrative costs which would have otherwise been recovered by Spectrum over the term of this Agreement. In addition, Customer shall pay any and all additional costs, expenses and losses incurred by Spectrum as a result of such early termination of this Agreement.

(g) Customer shall not, without the prior written consent of Spectrum, disclose the terms and conditions of this Agreement or disclose any information concerning the details of this Agreement, except as may be required for internal corporate, accounting or legal review or as required by law, and upon any such disclosures, Customer shall take all necessary actions to prevent such further disclosure to the maximum extent possible. Any failure by Customer in this regard shall constitute a material breach of this Agreement. Such non-disclosure requirement shall survive termination or expiration of this Agreement.

(h) Both parties agree not to solicit the employment of the employees or former employees of the other for the term of this Agreement and any extensions hereto and for a period of one (1) year after termination or cancellation of this Agreement or any extension hereof, unless otherwise mutually agreed by the parties in writing.

(i) Spectrum shall perform all services under this Agreement as an independent contractor and not as an agent or employee of Customer. Spectrum may perform its obligation under this Agreement through the use of a subcontractor(s) provided that the use of a subcontractor(s) shall not diminish Customer's rights or Spectrum's liability under this Agreement.

(j) All notices to be given under this Agreement shall be made in writing and mailed by certified or registered mail, return receipt requested, to the other party at its address set forth below or at such other address as the party may specify in writing.

To Spectrum :

Spectrum Healthcare Solutions
150 Motor Parkway
Hauppauge, New York 11788
Attn: Director, Contracts

To Customer: ______________________________

______________________________

______________________________

______________________________

Attn: ______________________________

## SCHEDULE 1 TO MASTER AGREEMENT DATED AS OF ______________________, 19____

## SOFTWARE LICENSE

### 1. DEFINITIONS

All capitalized terms not otherwise defined herein shall have the meanings ascribed thereto in Section 1 of the Master Agreement.

### 2. LICENSE

(a) Spectrum grants to Customer a nonexclusive and nontransferable license (the "License") to use the Software for Customer's internal business purposes in accordance with the Documentation. The Software will be operated on the Equipment located at Customer's Facility and with the Operating Software, provided that if the Equipment malfunctions, Customer may operate the Software on substitute equipment until the malfunction is corrected. The Software may be operated on equipment acquired to replace the Equipment as long as Customer receives prior written acknowledgment from Spectrum, which shall not be unreasonably withheld, that the Software will operate properly on the desired replacement equipment. Customer may prepare a reasonable number of copies of the Software for archive and backup purposes and of the Documentation for internal business purposes as long as all copies of the Software and Documentation contain the proprietary notices appearing on the copies initially furnished to Customer.

(b) Except to the extent of those portions, if any, of the Software identified in Exhibit 1 to this Schedule 1 as being provided with source code, the Software is licensed in object code format only. If Software source code is licensed to Customer, Customer may use the source code solely to maintain the Software for Customer's internal business purposes.

(c) The foregoing rights may be exercised by Customer's employees as long as Customer shall be responsible for its employees complying with this Agreement.

(d) This Schedule 1 is a license agreement and not an agreement for sale; Spectrum retains title to the Software Assets and retains all other rights to the Software Assets not specifically granted under this Section 2.

### 3. TERM OF LICENSE

The License term shall commence upon the Effective Date, and unless indicated otherwise in Exhibit 1 to this Schedule 1, shall continue perpetually.

### 4. LICENSE FEE

A fee for the License (the "License Fee") shall be paid in the amount, at the times and subject to the terms specified in Section 3 of the Master Agreement and Exhibit 1 thereto.

### 5. PROTECTION OF PROPRIETARY RIGHTS

(a) Customer acknowledges that the Software Assets constitute valuable confidential and proprietary property belonging to Spectrum or to third parties who have granted Spectrum the right to distribute such property and that by receiving access to the Software Assets, Customer is entering into a relationship of trust and confidence with Spectrum pursuant to which Customer promises to take all reasonable steps to preserve the confidential and proprietary nature of the Software Assets.

(b) Customer shall use, copy and disclose the Software Assets only as permitted under Section 2 of this Schedule 1 and Section 7 of the Master Agreement and shall ensure that all persons receiving access to the Software Assets are obligated to Customer in writing to protect the Software Assets in a manner consistent with the terms of this Section 5. In no event will Customer reverse assemble or reverse compile the Software for the purpose of revealing the proprietary information contained in the Software or otherwise use the Software Assets to develop functionally similar computer software or to compete with Spectrum.

(c) Sections 5(a) and 5(b) of this Schedule 1 do not require Customer to protect any portion of the Software Assets (i) currently in the public domain, (ii) subsequently entering the public domain for any reason other than Customer's failure to meet its obligations under this Schedule 1 or (iii) rightfully acquired by Customer without obligation of confidentiality.

(d) Customer will notify Spectrum promptly of any violation of Spectrum's proprietary rights in the Software Assets of which Customer becomes aware and will assist Spectrum as necessary to remedy the violation.

(e) Customer's obligations under this Section 5 are in addition to its obligations under Section 7 of the Master Agreement.

(f) The provisions of this Section 5 shall survive the termination or expiration of this Schedule 1.

## 6. THIRD PARTY SOFTWARE

Portions of the Software provided to Customer under this Agreement may be owned by third parties. Such third party software is sublicensed to Customer by Spectrum and subject to the same terms and conditions that govern other Software unless otherwise restricted in Exhibit 1 to this Schedule 1.

## 7. DELIVERY AND INSTALLATION OF SOFTWARE

Within a reasonable time after the Effective Date, Spectrum shall deliver the Software to Customer's Facility together with written instructions intended to assist Customer in installing the Software. Unless otherwise indicated in Schedule 2 to the Master Agreement, Customer shall be responsible for installing the Software, training its employees in the use of the Software and converting, at its expense, Customer's existing data into the form required by the Software.

## 8. TERMINATION

(a) Customer may terminate this Schedule 1 as follows:

  (i) Customer may terminate this Schedule 1 without cause and at any time by giving Spectrum written notice of termination as long as the cumulative total of all License Fees set forth in Exhibit 1 to the Master Agreement have been paid in full. Termination of this Schedule 1 without cause under this Section 8(a)(i) shall not diminish Customer's rights and responsibilities under other Schedules to the Master Agreement or entitle Customer to a refund of any prepaid License Fees, including fees paid for Software not delivered to Customer as of the date of termination.

  (ii) Additionally, Customer may terminate this Schedule 1 by giving Spectrum at least ninety (90) days advance written notice if, after reasonable efforts, Spectrum fails to cure a breach of its Software warranty set forth in Section 5(a) of the Master Agreement.

(b) Spectrum may terminate this Schedule 1 by giving Customer written notice of termination if Customer:

  (i) Breaches any of its obligations under Section 5 of this Schedule 1 or Section 7 of the Master Agreement to protect Spectrum's proprietary information; or

  (ii) Commits a material breach of its obligations under this Schedule 1 (other than a breach of its obligations under Section 5 of this Schedule 1 or Section 7 of the Master Agreement), or fails to pay the License Fee when due, and in either event, fails to correct the breach or nonpayment within thirty (30) days after receiving written notification from Spectrum of the breach or nonpayment.

## SCHEDULE 2 TO MASTER AGREEMENT DATED AS OF ________________, 19___

## SOFTWARE INSTALLATION AND TRAINING SERVICES

### 1. DEFINITIONS

"Acceptance Period" for a Software Module means the period commencing on the first day of the Initial Acceptance Period (as defined herein) and terminating on the last day of the Supplemental Acceptance Period (as defined herein), if any, or on the last day of the Initial Acceptance Period if there is no such Supplemental Acceptance Period.

All capitalized terms not otherwise defined herein shall have the meanings ascribed thereto in Section 1 of the Master Agreement.

### 2. SUMMARY OF SERVICES PROVIDED

Spectrum will provide the services and materials specified below for the purpose of assisting Customer in the installation of the Software into live operation at Customer's Facility ("Installation Services"). If so indicated below, Spectrum shall also render services intended to train Customer and Customer's employees to use the Software ("Educational Services") and/or modify the functionality of the Software ("Modification Services"). The combination of Installation, Educational and Modification Services received by Customer are collectively referred to as the "Services".

### 3. PAYMENT TERMS

Customer shall pay for the Services at the time, in the amounts and subject to the terms specified in Section 3 of the Master Agreement and Exhibit 1 thereto.

### 4. TERM AND TERMINATION OF SCHEDULE

The term of this Schedule 2 shall commence on the Effective Date and continue until Spectrum performs all Services. If either party commits a material breach under this Schedule 2, the other party may notify the breaching party in writing of its intention to terminate this Schedule 2 effective upon a date occurring at least ninety (90) days after the breaching party receives such notice unless the breaching party cures or takes reasonable steps to cure the breach before the designated termination date. Customer's failure to pay amounts due under this Schedule 2 shall constitute a material breach of this Agreement.

### 5. PERFORMANCE SCHEDULE; LOCATION OF PERFORMANCE

Spectrum shall use its best efforts to commence and complete the Services in accordance with a schedule mutually agreed to by the parties utilizing the "Installation Work Plan" set forth on Exhibit 3 to this Schedule 2. Unless otherwise indicated in Exhibit 1 to this Schedule 2, Services will be performed at Customer's Facility.

### 6. INSTALLATION SERVICES; ACCEPTANCE

(a) Spectrum will load the Software on to the Equipment and configure the Software in accordance with the Installation Work Plan to operate in conjunction with the Equipment and Operating Software. Such loading and configuration services shall occur before either party modifies the Software.

(b) Customer shall have an initial period of thirty (30) days (the "Initial Acceptance Period"), commencing upon a Software Module's Load Date, to verify that the Software Module is free from Nonconformities. Spectrum, at its expense, shall promptly correct any Nonconformities of which it receives written notification during the Initial Acceptance Period. Customer shall provide Spectrum with assistance reasonably requested by Spectrum to correct a reported Nonconformity. Customer shall have an additional fifteen (15) day acceptance period (the "Supplemental Acceptance Period"), commencing upon the date that Spectrum corrects each Nonconformity, to verify correction of the previously reported Nonconformity. If Spectrum fails to correct a previously reported Nonconformity, Customer shall so notify Spectrum in writing during the applicable fifteen (15) day Supplemental Acceptance Period and Spectrum's correction efforts and Customer's evaluation rights as stated above shall be repeated until the Nonconformity is corrected.

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(c) Each Software Module shall be deemed accepted by Customer as of the expiration of the Initial Acceptance Period ("Acceptance Date"), unless Customer notifies Spectrum in writing of Nonconformities during such Initial Acceptance Period, in which event the Acceptance Date shall be the expiration of the fifteen (15) day Supplemental Acceptance Period following correction of the last reported Nonconformity.

(d) Spectrum shall also perform the "Additional Installation Services", if any, described in Exhibit 1 to this Schedule 2. Unless otherwise indicated on Exhibit 1 to this Schedule 2, Customer shall be responsible for procuring required interface and conversion software, converting Customer's current files and records into a format required by the Software and interfacing the Software with software and hardware not provided by Spectrum.

## 7. MODIFICATION SERVICES

(a) Should Customer request and Spectrum agree to modify the functionality of the Software, such services shall be performed subsequent to the Final Acceptance Date of the Software and subject to the terms and conditions of this Section 7. If no modification services are specified in this Agreement, Spectrum shall not be obligated to modify in any way the standard functionality of the Software.

(b) Customer shall describe in writing the changes to the Software desired by Customer ("Modifications"). Within a reasonable time after receiving such description, Spectrum will inform Customer of (i) the fee ("Specification Fee") for developing modification specifications ("Specifications") and (ii) an estimated fee ("Estimated Modification Fee") for developing, testing and implementing the Modifications ("Modification Services"), provided that Spectrum may reject any requested Modification which, in Spectrum's opinion, may either adversely affect the basic structure of the unmodified Software or infringe the rights of a third party.

(c) Customer shall advise Spectrum in writing, within thirty (30) days after receiving the Specification Fee and Estimated Modification Fee, whether Spectrum is to commence developing the Specifications. If Customer authorizes Spectrum to prepare the Specifications, Customer shall provide Spectrum with information and assistance reasonably requested by it to prepare the Specifications. Spectrum shall submit the completed Specifications to Customer for review and approval, together with an identification of the cost to perform the Modification Services ("Modification Fee"). If Customer desires Spectrum to modify the Specifications, Spectrum shall inform Customer of the additional time and expense to do so, and Customer will notify Spectrum whether Customer desires Spectrum to modify such Specifications.

(d) Within thirty (30) days after receiving the Specifications and Modification Fee, Customer shall notify Spectrum in writing whether Customer desires Spectrum to perform the Modification Services. If Customer so instructs Spectrum to perform the Modification Services, Spectrum shall develop and test the computer code required to implement the Modifications, provided that Customer shall provide Spectrum the test data required by Spectrum to verify that the Modifications operate in accordance with the Specifications. After successfully testing the Modifications, Spectrum shall deliver the Modifications to Customer who shall test the Modifications in accordance with the terms of Sections 6(b) and (c) of this Schedule 2, provided that for purposes of testing the Modifications, the term "Nonconformity" used in Sections 6(b) and (c) of this Schedule 2 shall mean any instance where the Modifications materially fail to operate in accordance with the Specifications and the term "Initial Acceptance Period" used in said Sections shall commence upon Customer's receipt of the Modifications.

(e) Customer shall use the Modifications in accordance with the terms of the License. All proprietary rights, including copyrights, trade secrets and patents, arising from the Modifications shall be owned by Spectrum, and at Spectrum's request and expense, Customer shall assign to Spectrum in writing, any proprietary interest in the Modifications conferred upon Customer by operation of statute or under common law. Customer shall not sell, market or provide the Modifications to any third party, unless otherwise agreed under the terms of this Agreement. Customer will protect the proprietary nature of the Modifications in accordance with the terms of Section 7 of the Master Agreement and Section 5 of Schedule 1.

## 8. TRAINING

Spectrum will provide Customer with Educational Training concerning use of the Software as specified in Exhibit 2 to this Schedule 2. The Educational Training fees are set forth in Exhibit 1 to the Master Agreement. Educational Training will be made available to the number of Customer's personnel indicated in Exhibit 2 to this Schedule 2. Customer's personnel thereafter will be responsible for training the balance of Customer's staff and will support subsequent training by Customer. The applicable Educational Training fee entitles Customer to the number of standard user manuals and training guides specified in Exhibit 1 to this Schedule 2 for both the education of the initially designated Customer personnel and the ongoing training to be carried out by Customer. Upon receiving Spectrum's prior written approval, Customer may make duplicate copies of such user manuals and training guides. The standard user manuals and training guides shall be deemed Documentation and shall be used and protected by Customer in accordance *with the terms of Schedule 1 to the Master Agreement. Additional training requested by Customer from Spectrum, may be provided* by Spectrum, based on its availability, at Spectrum's then-current rates.

## 9. CUSTOMER RESPONSIBILITIES

During the performance of the Services, Customer shall provide the information, services, materials and resources described below and in Exhibit 1 to this Schedule 2 ("Customer Responsibilities"):

Furnish necessary data

Establish departmental procedures

Participate in joint reviews

Make timely decisions on matters and issues associated with the Installation Work Plan

Establish and execute any data conversion or interface programs for functions not included in the Software

Incorporate all Documentation updates provided

Provide, at its expense, reasonably adequate office space, equipment and secretarial assistance required for any Spectrum personnel located at Customer's Facility

Establish and maintain a change control system

Establish appropriate operations procedures

Obtain interface and conversion software for converting Customer's current files and records

Customer understands that the successful performance of the Services depends upon Customer fulfilling the Customer Responsibilities and making its best effort to cooperate with Spectrum. Any failure by Customer in this regard may cause an extension of the dates for performance and/or an increase in the Service charges, and if material, termination of this Schedule 2.

## SCHEDULE 3 TO MASTER AGREEMENT DATED AS OF ____________________, 19____

## SOFTWARE SUPPORT

### 1. DEFINITIONS

"Enhancements" mean updates, corrections, modifications, new releases and versions of the Software made generally available without charge to Spectrum's other Software customers receiving support similar to the Software Support provided to Customer under this Schedule 3.

All capitalized terms not otherwise defined herein shall have the meanings ascribed thereto in Section 1 of the Master Agreement.

### 2. SUPPORT SERVICES

(a) Spectrum shall take all reasonable steps to correct any Nonconformities ("Corrective Maintenance") and shall provide Enhancements for the Software (collectively "Software Support").

(b) Corrective Maintenance shall be performed as follows:

(i) Customer may request Corrective Maintenance during the Coverage Hours as defined in Exhibit 1 to this Schedule 3, by telephone or by mail. Telephone requests for Corrective Maintenance (1) beyond the Coverage Hours or (2) in excess of the Monthly Support Ceiling, if any, designated in Exhibit 1 to this Schedule 3 shall result in Additional Charges as explained in Exhibit 1 to this Schedule 3.

(ii) Customer shall provide Spectrum with all information and assistance requested by Spectrum to detect, simulate and correct any Nonconformities.

(iii) Within a reasonable time after confirming the existence of a Nonconformity, Spectrum shall provide Customer with revised Software code or an avoidance procedure to correct the Nonconformity.

(iv) Spectrum shall provide Corrective Maintenance from its business premises except that Spectrum, at Spectrum's expense, will perform Corrective Maintenance at Customer's Facility for all Nonconformities that, in Spectrum's reasonable judgment, significantly impair the operation of the Software and that Spectrum is unable to correct by performing Corrective Maintenance from Spectrum's premises.

(v) Spectrum shall also perform the Additional Corrective Maintenance services, if any, described in Exhibit 1 to this Schedule 3.

(c) Customer will install all Nonconformity corrections and Enhancements with reasonable telephone assistance from Spectrum. All Nonconformity corrections and Enhancements shall be provided in a form and with installation instructions sufficient to permit installation by Customer.

(d) Spectrum is not required to perform Corrective Maintenance with respect to Nonconformities caused by:

(i) Customer's modifications to the Software;

(ii) Customer's failure to use Enhancements or Nonconformity corrections;

(iii) Misuse of the Software;

(iv) Third Party Product malfunctions;

(v) Customer's failure to use either of the two most current versions of the Software then offered by Spectrum; or

(vi) Customer's failure to use the version then approved by Spectrum of any third party software that operates with the Software, including but not limited to, Operating Software.

If Customer requests Spectrum to correct the foregoing problems, all corrective services performed by Spectrum shall be deemed *Supplemental Services governed by Section 6 of this Schedule 3.*

## 3. COVERAGE PERIOD; RENEWALS; TERMINATION

(a) Software Support and the initial term of this Schedule 3 shall commence on a module-by-module basis effective upon the "Support Start Date" specified in Exhibit 1 to this Schedule 3 and, unless provided otherwise in such Exhibit, shall continue until the date occurring one (1) year after the Acceptance Date of the first Software Module accepted, as adjusted to allow for said date falling on the first day of the nearest calendar quarter (i.e., January, April, July or October). Thereafter, Spectrum will forward an annual renewal contract for Software Support for all Software Modules for consecutive one (1) year periods for as long as Spectrum is making Software Support generally available for such Software Modules.

(b) If Customer desires to renew Software Support after a period of noncoverage, Customer shall pay Spectrum a reinstatement fee to update the Software. In no event will the reinstatement fee exceed the Support Charges that would have been paid during the period of noncoverage.

(c) This Schedule 3 may be terminated as follows:

(i) Customer may terminate this Schedule 3 without cause effective upon the expiration of the then current coverage period by notifying Spectrum in writing of its desire to terminate this Schedule 3 not less than sixty (60) days prior to the next renewal period;

(ii) Customer may terminate this Schedule 3 if Spectrum commits a material breach of its obligations under this Schedule 3 and fails to cure or take reasonable steps to cure such breach within ninety (90) days after receiving from Customer written notification of the breach and Customer's intention to terminate if Spectrum fails to correct the breach. If Customer terminates this Schedule 3 as provided in this Section 3(c)(ii), Spectrum shall promptly refund to Customer all charges previously paid by Customer for Software Support to be rendered during the balance of the then-current coverage period. This refund constitutes Customer's sole and exclusive remedy and Spectrum's maximum liability for breach of this Schedule 3.

(iii) If Customer fails to fulfill its responsibilities set forth in Section 5 of this Schedule 3, pay the Software Support Fees required under Section 4 of this Schedule 3, or, operate either of the two most current versions of the Software then made available by Spectrum, Spectrum may (1) terminate this Schedule 3 by notifying Customer in writing of Spectrum's intention to terminate this Schedule 3 effective not earlier than sixty (60) days after Customer receives such notice; or (2) suspend Software Support until such failure is corrected.

## 4. PAYMENT TERMS

(a) For Software Support provided during the initial period contemplated under Section 3(a) of this Schedule 3, Customer shall pay a Software Support fee in the amount, at the times and in accordance with the payment terms specified in Section 3 of the Master Agreement and Exhibit 1 thereto. For Software Support provided during the renewal periods contemplated under Section 3(a) of this Schedule 3, Customer shall pay the then-current Software Support fee.

(b) Increases in the renewal Software Support fee (i) shall not exceed increases generally charged to Spectrum's other commercial customers receiving similar software support and (ii) shall not occur more frequently than once per twelve (12) month period.

## 5. CUSTOMER'S RESPONSIBILITIES

Customer understands that in order for Spectrum to provide Software Support, Customer must:

(a) Provide, at Customer's expense, the "Remote Dial-up Capability", if any, specified in Exhibit 1 to this Schedule 3;

(b) Identify to Spectrum one person and one alternate to serve as Customer's support contact ("Representative"). Only Customer's Representative shall be authorized to request and receive Software Support on behalf of Customer. Customer may change its Representative by written notice to Spectrum; and

(c) Provide Spectrum with full and free access to the Software, Equipment and all Customer data used by the Software during the times requested by Spectrum. Access to such data shall be used exclusively for Software Support purposes and shall be subject to Spectrum's obligations to protect proprietary information set forth in Section 7 of the Master Agreement. Customer shall cooperate fully with Spectrum's reasonable requests for information, personnel and time necessary to provide Software Support.

## 6. SUPPLEMENTAL SERVICES

All services, if any, performed by Spectrum in addition to the Software Support provided by Spectrum under Section 2 of this Schedule 3 ("Supplemental Services") shall entitle Spectrum to additional compensation at its then current time and material rates including reimbursement for travel expenses, and shall be rendered on a best efforts basis.

# EXHIBIT 1
# TO MASTER AGREEMENT
# TERMS AND PAYMENT SUMMARY SCHEDULE

HOSPITAL
CITY, STATE

## A. PAYMENTS AND TERMS

| | |
|---|---|
| **TOTAL LICENSE PERPETUAL TERM FEES** | $ |

Terms:

Thirty-five percent (35%) upon execution of this Agreement.
Thirty-five percent (35%) upon delivery of Software code on magnetic media.
Thirty percent (30%) thirty (30) days subsequent to delivery of Software code on magnetic media.

| | |
|---|---|
| **TOTAL SOFTWARE INSTALLATION AND TRAINING FEES** | $ |

Terms:

Thirty-five percent (35%) upon execution of this Agreement.
Ten percent (10%) upon delivery of Software code on magnetic media for applicable Software Modules.
Twenty percent (20%) upon commencement of formal education or on-site training but in no event later than the Acceptance Date for applicable Software Modules.
Twenty percent (20%) upon Acceptance Date for applicable Software Modules.
Fifteen percent (15%) thirty (30) days subsequent to Acceptance Date for applicable Software Modules.

| | |
|---|---|
| **TOTAL SOFTWARE MODIFICATION FEES** | $ |

Terms:

Thirty percent (30%) upon execution of this Agreement.
Fifty percent (50%) upon delivery of Software code on magnetic media for applicable Software Modules.
Twenty percent (20%) upon Acceptance Date for applicable Software Modules.

EXHIBIT 1
TO MASTER AGREEMENT
TERMS AND PAYMENT SUMMARY SCHEDULE

**TOTAL SOFTWARE SUPPORT FEES - Value Added / Plus Plan** **$/Year**

Terms:

Notwithstanding the Warranty Period provided in this Agreement, Customer shall be invoiced (monthly/annually) and commence payment for Software Support upon the Load Date of each Software Module. In the event a Software Module is installed by Customer, payment shall commence upon delivery of Software code on magnetic media.

**TOTAL DEPOSIT REQUIRED UPON EXECUTION OF THIS AGREEMENT** **$**

## B. WARRANTY COVERAGE TERMS

Warranty Start Date:

Customer's warranty for each Software Module provided hereunder shall commence upon the Acceptance Date of each Software Module.

Warranty Duration:

Thirty (30) days.

## C. ACCEPTANCE DOCUMENTS

For the purpose of monitoring and documenting the completion of each deliverable milestone obligation set forth herein, Spectrum shall prepare and present to Customer, for Customer's signature, a "Certificate of Acceptance" evidencing the completion by Spectrum and acceptance by Customer of a contractual milestone. Said Certificate of Acceptance shall be in the format set forth in Exhibit 2 to the Master Agreement. In the event Customer fails to notify Spectrum within ten (10) days after receipt of a Certificate of Acceptance as to any reason why the milestone effort(s) described therein have not been deemed, in Customer's reasonable judgment, to have been accomplished, Customer shall be deemed to have signed said Certificate of Acceptance.

[redacted]

# SPECTRUM HEALTHCARE SOLUTIONS

# RADIOLOGY INFORMATION MANAGEMENT SYSTEM

## (RIM)

# SPECTRUM HEALTHCARE SOLUTIONS

## HARDWARE ENVIRONMENTS

- STAND ALONE
- INTERFACED
  - HOST CPU
  - ES/9000 TO S/370
  - RIM TO PCS
  - RIM TO SERIES 5000
  - RIM TO SMS, HBO
  - RIM TO TDS
- ES/9000 TO AS/400
- ES/9000 TO OTHER HARDWARE

# SPECTRUM HEALTHCARE SOLUTIONS

## RIM ARCHITECTURE

- S/370 - ES/9000
- 3179L'S DISPLAYS
- 4224'S PRINTERS
- IBM BAR CODE READERS
- MVS OR VSE
- CICS
- VSAM AND DL/1
- ADS

# SPECTRUM HEALTHCARE SOLUTIONS

## RIM FACTS

- Target Customer
  › 200 beds or ›70,000 procedures/year
- Base Configuration Price
  Approx. $500,000 including hw/sw/install/periph
- Hardware
  ES/9000 (370 base)
- Software
  VSE/CICS/DL1/ADS
- Installations
  8 licenses sold - 2 fully installed
- Installation time
  6 months

# Market Opportunities

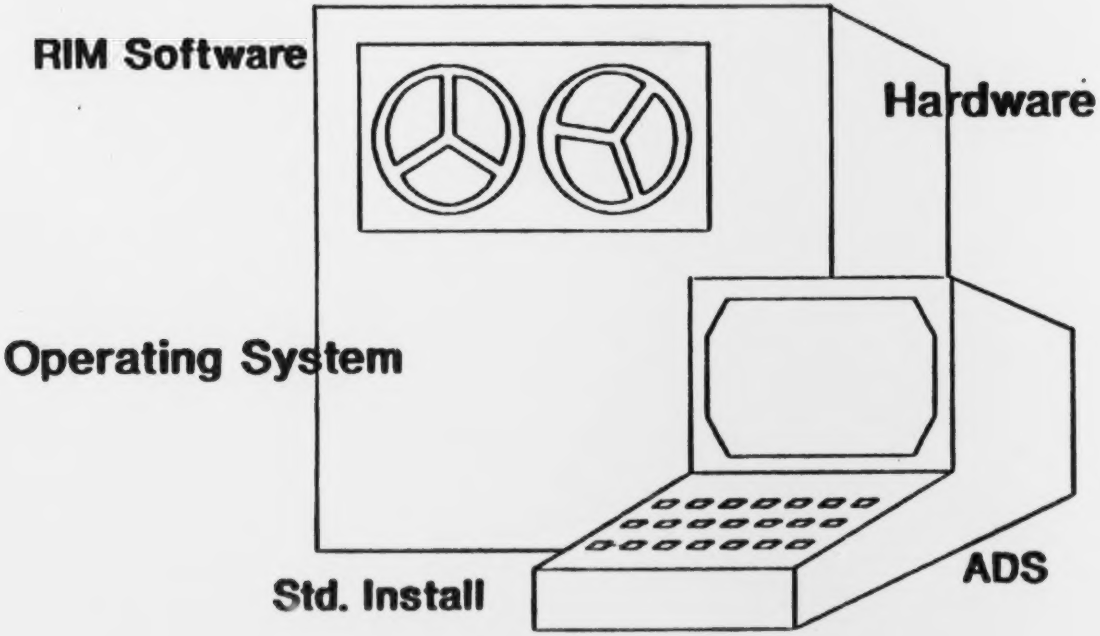
- Current Spectrum 5000 and PCS Install Base
- Interface to competitive Host
  - SMS, TDS, HBO
- Standalone Departmental Solution

# Base Configuration: < 100,000 Proc

## ES/9000 - 120

| | | |
|---|---|---|
| HARDWARE | $ | 300,000 |
| OPERATING SYSTEM | $ | 60,000 |
| RIM | $ | 75,000 |
| ADS | $ | 45,000 |
| INSTALLATION | $ | 75,000 |
| | $ | 555,000 |

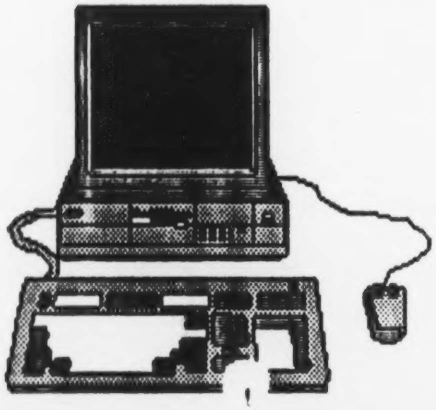
# PACKAGED APPLICATION OFFERING


RIM Software
Hardware
Operating System
Std. Install
ADS

All loaded and ready for install on delivery

# MAJOR FUNCTIONAL AREAS

- Patient Registration
- Appointment Scheduling
- Order & Patient Tracking
- Charge Capture
- Results Management
- Film Library Mgmt
- Equipment Tracking
- Management Reports



# Appointment & Resource Scheduling

- Automatic and Manual
- Conflict Scheduling based on:
    - Availability of Resource
    - Length of time required
    - Weight Value
    - Lag time
- Pre-booking for Outpatients
- Automatic re-scheduling
    - Individual
    - Blocks

# Radiology Information Management

## Order Entry and Processing

- Verified or Unverified Orders
- Pre-determined Group Orders:
  - Dynamic Profile
- Dynamic Profile Orders
  - System builds automatically
  - compatibility criteria
  - prioritized
  - multiple procedures - one result
- Output for Verified/Scheduled Order:
  - Profile Slip
  - Requisition
  - Appointment Slip
  - Transportation Slip
  - Flash Card

# Radiology Information Management

## Order & Patient Progress Tracking

- Patient Log-In/Log-out
- Procedure start and finish times
- Record procedure complete/incomplete
- File media and quality control information capture
- File folder and bar code labels printed
- Technical Charge capture

# Radiology Information Management
## Diagnostic Results Reporting

- Separate "normal results" function
  - pre-written text based on procedure
- Standard results entry
  - free text
  - prewritten (canned) text
  - combination
- "Interesting Result" indicator
- Supports ACR coding
- Interim & Verified results printed in radiology
- Verified results printed at patient location
- Professional fee generated for billing

# Radiology Information Management

## Library Management & Film Tracking

- Tracks master and insert folders
- Maintains database of authorized users
- Bar code driven
- Tracking by patient, film, borrower
  - Copy/Loan requests
  - Outstanding/Overdue loans
  - Loan/Borrower history

# Radiology Information Management

## Management Reporting

- Daily Admission/Registration Activity
- Incomplete Report List
- Workload Reports
- Quality Control Report
- Daily Schedule and Logs Pull List
- Patient Services Report
  - Patient Summary
  - Radiologist Summary
  - Resource Summary
  - Technologist Summary
- Film Location Report
- Patient Charge Report

# Radiology Information Management

## BENEFITS

- Efficiently manage patient workflow
- Improve turn-around time for results
- Improve productivity
- Improve resource utilization
- Minimize retakes
- Minimize lost charges
- Decrease patient waiting time
- Enhance management information availability

# SPECTRUM HEALTHCARE SOLUTIONS

# PHARMACY MANAGEMENT SYSTEMS

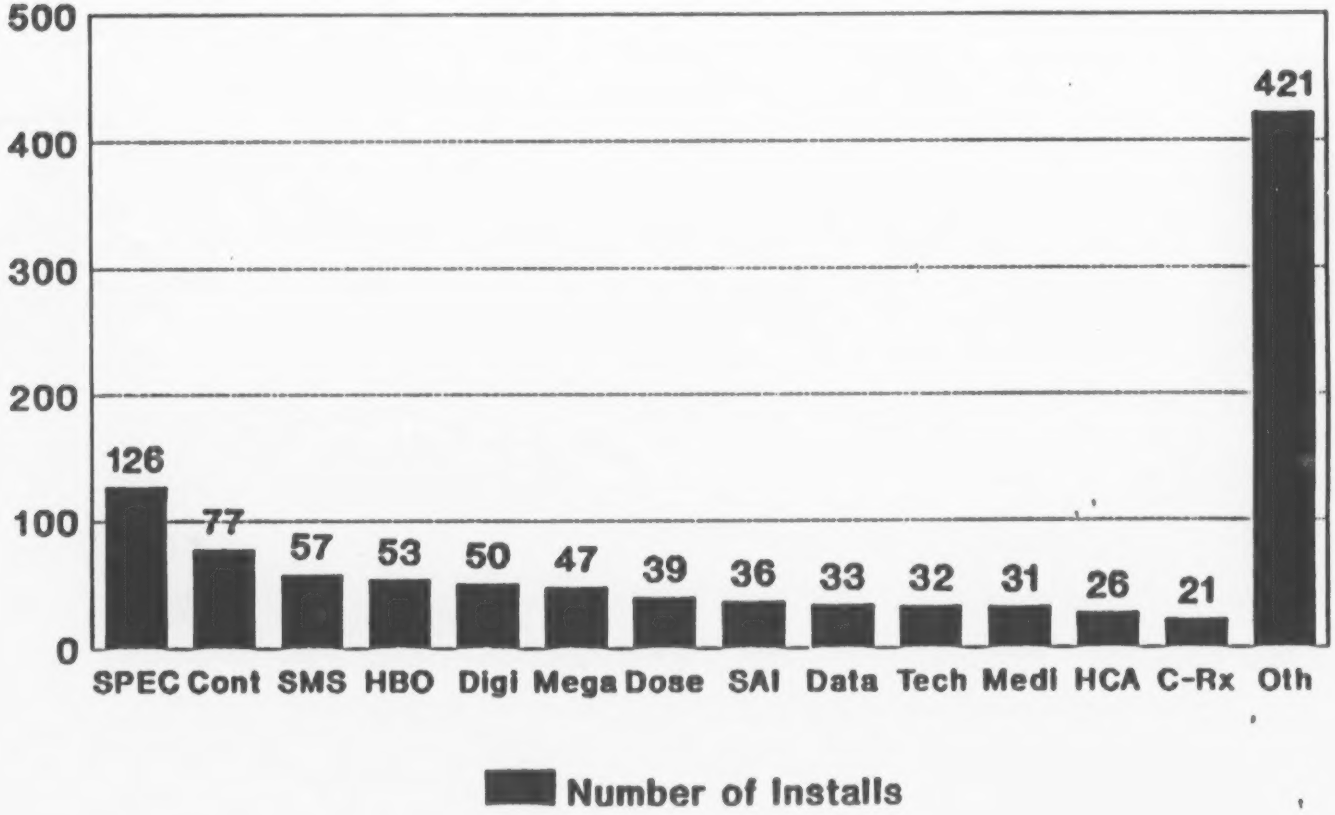
# Spectrum Healthcare Solutions

## Pharmacy Management Systems

- Series 3000 on the RISC/6000
- Series 4000 on the AS/400
- Series 5000 on the ES/9000
- Drug Data Services
- Micro based products
- RxExpress for Outpatient Retail Pharmacy

# Inpatient Pharmacy Systems Installed

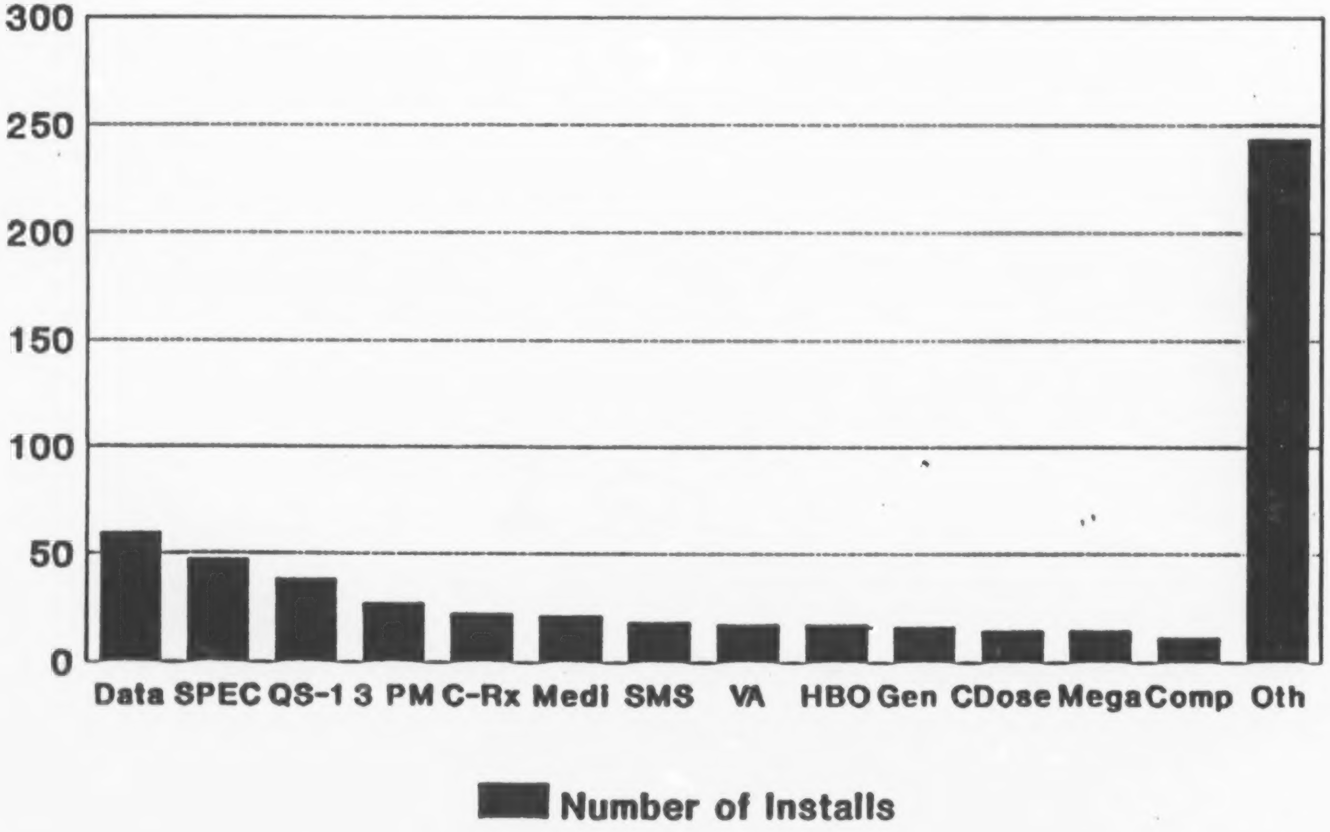
## By Vendor



Source:1990 ASHP Hosp Survey (1049 resp)

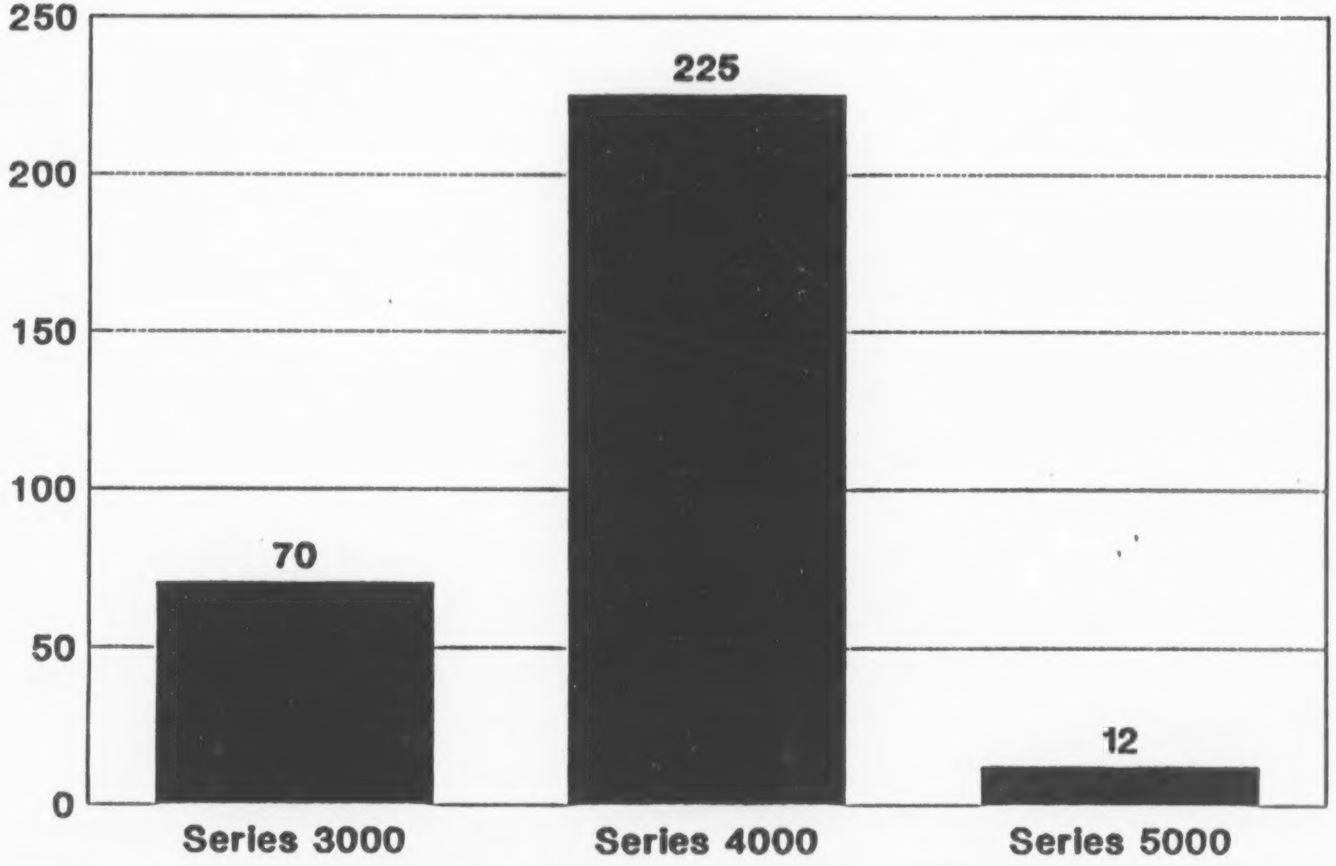
# Outpatient Pharmacy Systems Installed

## By Vendor



Source:1990 ASHP Hosp Survey (564 resp)

# Pharmacy Systems Installed



Spectrum Healthcare Solutions

# OPERATING ROOM SYSTEM

# OPERATING ROOM SYSTEM

## Goals of OR System

- Automate the Scheduling Process and improve it's efficiency
- Computerize surgeon preference cards for easy access and modification
- Monitor procedure costs for cost containment
- Track room utilization
- Document nursing and surgeon activity
- Record supply usage to reduce costs
- Provide quality assurance audits to meet JCAH requirements
- Automate recordkeeping and tracking of statistics
- Identify case delays and scheduling problems
- General departmental reports for monitoring activity

Spectrum Healthcare Solutions

# OPERATING ROOM SYSTEM

- Scheduling
- Case Prepping
- Case History / Management Reports
- Inventory Control
- Multi User, Multi Tasking System
- Native Code on the AS/400

**Spectrum Healthcare Solutions**

# OPERATING ROOM SYSTEM

## Completely Automates the Scheduling Function

- Automatic Conflict Resolution
  Of Room, Surgeon, Equipment, Anesthesiologist
- Supports Block and First Come/First Served Scheduling
- Simultaneous Scheduling by multiple Clerks
- Detailed Reporting
  - Summary & Detail Schedule
  - Graphic Block Utilization
  - Staff Requirements
  - Cancellations
  - Scheduling efficiency/room utilization
  - Scheduled equipment

**Spectrum Healthcare Solutions**

# OPERATING ROOM SYSTEM

## Automating the Preference Card

- Aids to build cards
    - " Copy From "
    - Help Screens
- Aids to upkeep Preference Cards
    - Mass Update
- Picklists
    - By Category
        - Bin Location
        - Asset Location
- Surgery Check Sheets
    - Surgeon Specific
    - Mark exceptions only

Spectrum Healthcare Solutions

# OPERATING ROOM SYSTEM

## Case History - OR System Solution

- Billing
    - Automated Charge Capture
    - Interface Potential

- Reporting
    - Creation of automated database
    - Wide variety of standard reports
    - Selection criteria
    - Query

**Spectrum Healthcare Solutions**

# OPERATING ROOM SYSTEM

## Meets the Needs of the OR

- Streamlines Day-to-Day activities for increased overall operation efficiency

- Puts Business analysis tools in the O.R. Manager's hands for accurate future planning

Spectrum Healthcare Solutions

# 1988 PHARMACY INSTALLS BY HOSPITAL SIZE

| VENDOR | 100-199 Beds | 200-399 Beds | 400+ Beds | Total | Installed As of 1990 |
|---|---|---|---|---|---|
| SPECTRUM | 66 | 129 | 45 | 244 | 307 |
| SMS | 27 | 88 | 23 | 139 | |
| HBO | 26 | 67 | 22 | 118 | |
| CONTINENTAL | 23 | 49 | 37 | 110 | |
| DIGIMEDICS | 32 | 31 | 16 | 79 | |
| AMEX/SAINT | 48 | 22 | 1 | 75 | |
| MEDITECH | 27 | 37 | 0 | 74 | |
| AMEX/McD-D | 21 | 38 | 11 | 71 | |
| DOSE | 5 | 41 | 17 | 63 | |
| TDS | 10 | 21 | 30 | 61 | |
| Others | 354 | 354 | 205 | 931 | |
| TOTALS | 639 | 877 | 417 | 1,965 | |

# PHARMACY MANAGEMENT SYSTEMS
# SERIES 3000

- TARGET MARKET
  - 50 - 300 Beds
  - No prior Pharmacy Systems Experience
  - Current Series 3000 HIS Client Base
  - S/36 and AS/400 Users
- HARDWARE PLATFORM
  - Existing System 36
  - AS/400 B20 OR B35
  - RISC/6000
- PRICING

| | |
|---|---|
| Software | - $15,000 |
| Install | - $ 8,000 - Int $16,000 Stand Alone |
| Maintenance | - $ 280/Mo - Value Added |
| DDS | - $ 9,000/Yr |

# PHARMACY MANAGEMENT SYSTEMS
## SERIES 4000

- TARGET MARKET
  - 200 - 1000 + Beds
  - Second Generation User - Replacement
  - Looking for high level functionality
  - S/4 Client Base or Large Hosp Dept Stand Alone
  - GTE/SMS Client Base
  - Budget of 300 - 750K
- HARDWARE PLATFORM
  - Existing System/38
  - AS/400
- PRICING
  - Software : $110,000 ($150,00 if mainframe client)
  - Install : $32,000 - $70,000
  - Maintenance : $ 770/Mo - Value Added
  - DDS : $ 9,500/Yr

# SPECTRUM HEALTHCARE SOLUTIONS

## SERIES 4000 RX INTERFACES

| VENDORS | |
|---|---|
| IBM | 2 |
| SPECTRUM | 6 |
| GTE | 4 |
| HBO | 4 |
| SMS -ACTION | 1 |
| INDEPEN | 2 |
| SPIRIT | 1 |
| HOME/OTH | 6 |

| HARDWARE | |
|---|---|
| S/38 | 1 |
| AS/400 | 4 |
| 308X/309X | 12 |
| 43XX | 7 |
| DEC/VAX | 1 |

# PHARMACY MANAGEMENT SYSTEMS
## SERIES 5000

- TARGET MARKET
  - 350 - 1000 + Beds
  - System 370 / PCS Users
  - S/5 Client Base or Large Hosp Dept Stand Alone
  - SMS Users

- HARDWARE PLATFORM
  - Existing System/370
  - ES/9000

# PHARMACY MANAGEMENT SYSTEMS
# SERIES 5000 PRICING

| SOFTWARE | INSTALLATION | SUPPORT |
|---|---|---|
| $ 191,000 Rx System | $ 56,250 - $ 90,000 | $ 31,515 /Yr |
| $ 90,000 Charting | Time & Materials<br>Estimate $15,000 | $ 14,850 /Yr |
| $ 7,800 File Trans. | User | $ 3,750 /Yr |
| $ 3,750 Table Mgr | User | Annual Lic incl supp |
| $ 3,750 Data Admin | User | Annual Lic incl supp |
| $ 12,000 NDDF | User | N/A |
| $ 11,700 ATC Interf | User | $ 3,750 /Yr |

# PHARMACY MANAGEMENT SYSTEMS

## Rx Express Outpatient Pharmacy

- TARGET MARKET
  - Applicable to all Pharmacy Series Markets
  - Large OP volume
  - Possible Clinic Environment
  - Possible retail Pharmacy attached to Hosp
- HARDWARE PLATFORM
  - S/370 - ES/9000
  - IBM PC
  - AS/400
- PRICING

| | S/370 | PC |
|---|---|---|
| Software | $100,000 | $12,500 |
| per WS | 2,000 | 1,250 |
| Install | $10,000 est | $ 5,000 est |
| Maintenance- | $ 1,250/Mo | $313/Mo |

# SERIES 5000

## THIRD PARTY VENDORS

- 3M HEALTH INFORMATION SYSTEMS
- COMPUTRITION
- DKD
- CIS
- GLOBAL SOFTWARE
- HEALTHCARE KNOWLEDGE SYSTEMS
- COMCOTEC INC.
- PANSOPHIC
- META

# CIS ELECTRONIC CLAIMS MANAGEMENT

- All Payor Solution
  - Medicare
  - Medicaid
  - Commercial
- UB/82 and HCFA 1500
- Inpatient and Outpatient
- Payor specific edits
- Active payor relations
- Electronic and Paper

# CIS ELECTRONIC CLAIMS MANAGEMENT

**TARGET MARKET**

All Series 3000, 4000, and 5000 Clients
Inclusion in all HIS Bids

**HARDWARE**

PS/2 , Modem, and Printer

**INSTALL**

60 - 90 Days

**PRICING**

| | | |
|---|---|---|
| Software | $ 5,000 | $1,000 Annual Renewal |
| Install | $14,500 | |
| Support | $ 500/Mo | |
| Transaction Fee | $12/Bed per AHA | |

# SPECTRUM HEALTHCARE SOLUTIONS
## DKD MANAGED CARE

### "ASCENT" Managed Care Information System

Contract Management

Utilization Management

Quality Assurance/Risk Management

Profiles of Treatment

Automatic Discovery (R&D)

# MANAGED CARE INFORMATION SYSTEM
## SALES STRATEGY

### HARDWARE ENVIRONMENT

- RS/6000
- 5 Models approx cost = $60,000 - $200,000

### PRICING

| | |
|---|---|
| DBMS & Contract Management | $170,000 |
| Installation | $ 15,000 |
| Support | $ 2,800/mo |

### Additional Models

| | |
|---|---|
| Profiles of Treatment with RCI | $70.000 |
| Utilization Managemnt | $50,000 |
| Quality Assurance/Risk Managment | $75,000 |

# 3M HEALTH INFORMATION SYTEMS
## AVAILABLE PRODUCTS

- CLINICAL DATA EDITOR (CDE)
- NY GROUPER - Add on to CDE and Database
- CHAMPUS GROUPER - Add on to CDE and Database
- HSI CODER
- AMBULATORY CLINICAL DATA EDITOR (ACDE)
- PEDIATRIC DRG (Stand Alone)
- UTILIZATION MANAGEMENT SYSTEM (W/Cert Review)
- QUALITY ASSURANCE SYSTEM (QAS)
- MEDROSTER
- CLINICAL SEVERITY INDEX
- ADD A SCREEN

## SERIES 5000

## MARKET SEGMENTS

- 400 + beds
- Multi-hospital/teaching institutions
- Potential product segments
  - Total HIS
  - PA into TDS accounts
  - CCS-OE/AR & ACF into PCS-PM/PA accounts
  - ACF into PCS/ORDERS, Duke orders accounts
  - Medical Records into PCS-PM/PA accounts
  - Medical Records into Series 5000 accounts
  - CCS into any mainframe accounts

## SERIES 5000

## PROSPECT PROFILE

- 400 + beds
- Existing IBM S/370 investments
- Complex, Multi-hospital, high volumes (IP,OP,ER)
- Multiple ancillary departmental systems
- Existing staff with following IBM experience:
    - Systems programming
    - Database administrator (DL-1, IMS)
    - CICS communications
- Information staffing 25-40 FTE's
- Proper expectation level re: hospital's involvement during implementation
- Sufficient processing power available or commitment to purchase sufficient CPU to process Series 5000

| CLIENT | # BEDS | FIN CORE PURCHASED | FIN CORE IMPLEMENTED | REL. | I CORE PU[illegible]D | I CORE IMPLEMENTED | REL. | HW | NOTES |
|---|---|---|---|---|---|---|---|---|---|
| N-WEST | | | | | | | | | |
| Parkland, TX | 962 | 5/90 | | | | | | IBM3090-180E | PM/PA SELF DEV WILL INSTALL PMAS, SELF DEV OE, ANSOS, PDM |
| St. Francis, OK | 726 | 8/88 | Plan '91 | 88.38 | 8/88 | 2/91 | 88.23 | IBM3090 | CRITICAL ACCT. LIST,MRS |
| Kettering, OH | 644 | 12/83 | 1/85 | 87.4 | 7/83 | 1/85 | | ES9000-320 | RUNNING PCI ORDERS, RAD/RIM |
| Shawnee Mission, OH | 383 | 12/84 | 1/87 | 87.2 | 12/82 | Install 1990 | 88.2 | ES9000-320 | 88.36 PMAS/MR/ADT/PHARMAKON,CERNER,PCI O/E, SERGISERVER |
| Hinsdale, IL | 408 | 9/83 | 6/87 | 87.4 | 6/87 | | | IBM3081K | RUNNING PCI OM, RX5000,MRS |
| Lutheran-Ft Wayne, IN | 425 | 11/85 | 12/86 | 88.3.8 | 12/87 | 12/90 | 88.2 | IBM3090 | OR STAR RUNNING,CERNER LAB,MICROMEDIX |
| Southwest Methodist, TX | 502 | | | PM | 11/90 | 11/91 | 88.23 | | PM BASED,SUNQUEST,DEC RAD $4000 RX |
| Heartland Hospital, MO | 641 | | | PM | 12/90 | | | IBM3090-150JH | CLINICAL CORE, PM BASED, MEDLAB, ADAC |
| Bay Med. Ctr., MI | 350 | 12/90 | | | | | | ES9000-210 | FINANCIAL CORE, VSE |
| EAST | | | | | | | | | |
| Manchester, CT | 303 | 12/87 | 2/90 | 88.34 | 12/87 | Plan 7/91 | | IBM4381 | IRT8 UPGRADE 1Q '91, CCS PLANNED, RAD/RIM, MRS |
| Rhode Island | 719 | 3/87 | 5/89 | 88.34 | | | | IBM3090-180J | IRT8 UPGRADE 3/91, MRS |
| St. Luke's/Roosevelt, NY | 1354 | 10/86 | 11/89 OP | 88.36 | 10/86 | | | IBM3090-180S | APT,UPGRADE 88.38 & IP 5/91, META |
| Strong Memorial, NY | 742 | 5/87 | 7/90 | 88.37 | | | | IBM3090-150E | APT,MRS, MEDITECH |
| Tallahassee, FL | 800 | 12/87 | 8/89 ADT | 87.4 | 12/87 | 8/89 | 88.22 | IBM3090-150E | ADT,CCS-FULL SYSTEM, MED LAB INTERFACE, RX4000, MRS |
| Hinds, MS | 288 | 12/87 | 9/90 | 87.43 | | | | IBM4381-14 | |
| Lakeland Regional, FL | 678 | 10/86 | 9/87 | 87.43 | 10/86 | 9/89 | 88.21 | IBM3090/180J | PMAS, OE/AR/RR FULL HOUSE, 88.3 IN TEST 5000RX INTERFACE,SUNQUEST,OR STAR,RAD/RIM,MRS |
| Richmond Memorial, VA | 351 | 5/86 | 7/87 | 87.46 | | | | IBM3081D | 88.3 UPGRADE 10/91, CODE 3 USER |
| South Hills, PA | 464 | 3/87 | 1/89 | 87.46 | 3/88 | 6/90 | 88.21 | IBM3090-200 | CCS FULL HOUSE,CERNER LAB INTERFACE, RX $5000, 88.3 IN TEST, RIM, MRS, APT, BETA-MED CHARTING |
| U of Maryland | 785 | 1985 | 7/89 | 87.43 | 1985 | | 87.4 | IBM3090/200E | 1ST APT USER, MRS |
| Greenwich, CT | 234 | 5/85 | 12/87 | 87.2 | 5/85 | PLAN Q3 91 | 88.23 | IBM4381 | 88.3 UPGRADE Q1 '91 |
| Holston Valley, TN | 585 | 6/84 | 12/84 | 87.4 | 7/87 | 9/90 | 88.23 | IBM3090-170S | CCS,OE-DIET,SUNQUEST INTERFACE, MRS, PHARMACON, RIM,MRS |
| Orlando Regional, FL | 733 | 5/85 | 4/88 | 87.2 | | | | AMDAHL5890-300E<br>IBM3081 | TDS CLINICALS NOT LIVE, MRS |
| Bridgeport, CT | 665 | 3/85 | 1/91 | 88.3.8 | 5/86 | PLAN Q4 91 | 88.2 | IBM3081K | LIVE SINCE 5/87,UPGRADED 86.1 TO 88.3 $4000RX, NURSING JR SYSTEMS, |

BEST COPY AVAILABLE

| CLIENT | # BEDS | FIN CORE PURCHASED | FIN CORE IMPLEMENTED | REL. | S5000 [illegible] T PROFILE IN CORE PURCHASED | S5000 [illegible] T PROFILE IN CORE IMPLEMENTED | REL. | HW | NOTES |
|---|---|---|---|---|---|---|---|---|---|
| **INTERNATIONAL** | | | | | | | | | |
| Dept of Vet Affairs, Aust | 430,750 | | | APHS | 8/89 | 6/90 | 88.2 | IBM4381 | 2 HOSPITAL CCS OE/AR,RAD,APT,HMS,MRS |
| Sunnybrook, Canada | 1193 | | | | 6/85 | 4/87 | 88.2 | IBM4381 | RX5000,HMS,RAD,ACUITY,OE/AR,PM BASED SUNQUEST LAB,MRS, OR STAR |
| Western Australia | 2952 | 3/89 | 6/89 | 87.4 | | | | IBM3084 | PM Based, RAD, HMS, APT |
| New Zealand | | | | | | | | | HMS |
| **WEST** | | | | | | | | | |
| LOMA LINDA, CA | 500 | 1986 | | | | | | IBM 3090-400 | Self supported |
| LACO | 3133 | 12/90 | | | 4/91 | | | ES9000 | 6 Facilities, Rancho (ccs) |
| Kaiser Permanente, CA | 3000 | 10/86 | 10/87 | 86.1 | | | | IBM3081 | |
| Palomar, CA | 491 | 6/89 | 6/90 | 88.38 | 6/89 | 7/90 | 88.23 | ES9000-320 | ADT,OE/AR,MULTI-HOSP,RX 5000,PHAS PLAN 1991, CERNER LAB (4 HOSPITALS) |
| Samaritan, AZ | 1600 | 2/90 | Plan 7/91 | 88.38 | | | | IBM3090-180J<br>200E | SELF DEV OE,AMS MATS,3M |
| Queens Medical, HI | 506 | 11/83 | 7/85 | 87.4 | | | | IBM3090 | |
| Stanford, CA | 663 | | 1984 | PM | 4/85 | 7/87 | 88.23 | IBM3090/280E | ALPHA SITE, FULL SYSTEM. HMS,PM BASED,DEC RAD, RX5000,SUNQUEST, BETA MED CHARTING,MRS |
| Maricopa, AZ | 524 | 12/90 | | | | | | IBM3090 | MRS 8/90 |
| Tucson Medical, AZ | 650 | | | PM | 11/90 | | 88.23 | IBM3090-200E | PM/PA, RX PDM, WANG LAB,SELF DEV O/E |
| **M-WEST** | | | | | | | | | |
| Barnes, MO | 1200 | 3/88 | 8/89 | 88.35 | | | | IBM3090-400E | CRITICAL ACCT. LIST, SELF-DEV OE |
| Indiana U, IN | 585 | 5/88 | 9/89 | 88.35 | | | | IBM4381 | VSE, DEV SITE FOR 3 C'S IN 1986,PHAMOS |
| Northwestern, IL | 761 | 1987 | 12/89 | 88.37 | | | | IBM3081 | ALPHA SITE IRT7, PCS BASED OE,MRS |
| SaCor, IL | 1800 | 9/88 | 6/90 | 88.37 | 9/88 | PLAN 8/91 | 88.23 | IBM3090-200J | LIVE AT ST. TERESE-RX5000,CERNER, (5 HOSP.),MRS |
| St Joseph's/Mt Clemo, MI | 487 | 11/80 | 5/90 | 88.36 | | | | IBM3090-200 | ORIG PHAS CLIENT-RECENT UPGRADE, SUNQUEST, MEDICUS MR, SELF DEV OE |
| Toledo, OH | 814 | 6/86 | 9/90 | 88.38 | 6/86 | 2/88 | 88.23 | IBM3090-180E | RAD-TRINITY, RX-BDM, OR-SURGISERVER, MR-3M, PCCS TEST, ALL UNITS. ALL DEPTS., ERM, CENTRAL SUPPLY, CHC LAB |
| U Cincinnati, OH | 615 | 9/80 | 9/90 | 88.35 | 1987 | PLAN '91 | 88.22 | AMDAHL5990-350 | PHAS UPGRADE-CCS SCHEDULED,RX DOSE,CHC-RAD & LAB,APT 9/90,OR STAR |
| Akron, OH | 500 | 4/88 | Plan 5/91 | 88.37 | | | | IBM4381 | CRITICAL ACCT LIST,MRS |
| Milwaukee, WI | 476 | 2/84 | 10/90 | 88.36 | | | | IBM3084QX | ADT,PA,MR,OE SELF-DEV, LDM LAB BDM OP RX |

| CLIENT | # BEDS | FIN CORE |  | REL. | LIN CORE |  | REL. | HW | NOTES |
|---|---|---|---|---|---|---|---|---|---|
|  |  | PURCHASED | IMPLEMENTED |  | PURCHASED | IMPLEMENTED |  |  |  |
| **EAST** |  |  |  |  |  |  |  |  |  |
| Greenville, SC | 748 | 9/84 | 11/86 | 86.1 |  |  |  | IBM3090 |  |
| Presbyterian, NC | 650 | 5/85 | 2/87 | 86.1 |  |  |  | ES9000-260 | TDS CLINICALS, MRS |
| Stamford, Ct | 289 | 7/84 | 7/86 | 86.1 |  |  |  | IBM4381 | HP BASED CLINICALS |
| Beth Israel, MA | 471 | 12/88 | Plan 8/91 | 88.38 |  |  |  | ES9000-320 | FOREIGN ADT, SELF DEV OE,MRS |
| Centra Health, VA | 380 | 5/89 | Plan 6/91 | 88.38 | 5/89 | Plan 10/91 | 88.23 | ES/9000 | RIN,RX5000,SUNQUEST,APT,SIS,MRS |
| Jackson Memorial, FL | 1185 | 6/88 |  | 88.36 |  |  |  | IBM3090 | ON HOLD |
| Med Coll Virginia, VA | 895 | 6/88 | Plan 6/91 | 88.38 |  |  |  | IBM3090-200E | APT,SIS TO TDS, MRS |
| Med Ctr Delaware, DE | 949 | 3/88 | 4/90 OP<br>4/91 IP | 88.38 | 11/88 | Plan 7/91 | 88.23 | IBM3090-200 | CERNER,RX $5000 1/91, MRS, APT, OE/AR ONLY |
| Mt. Sinai, NY | 1100 | 12/88 | 1/91 | 88.38 | 12/88 | Plan 4Q '91 | 88.22 | AMDAHL5890 | OR STAR,APT,META,CHC LAB,PHARMACON ADT ONLY, |
| Univ Boston, MA | 379 | 9/88 | Plan 6/91 | 88.38 | 9/88 | Plan 5/91 | 88.23 | HITACHI-EX30 | VSE,CCS OE, APT, MEDICUS INTERFACE, MRS, APT, $3000 RX |
| Univ. S. Alabama, AL | 263 | 1986 |  |  |  |  |  | IBM 3081 | SELF SUPPORTED |
|  |  | ----- |  |  | ----- |  |  |  |  |
|  |  | 49 |  |  | 28 |  |  |  |  |

4/25/91

# PCS ACCOUNT UPDATE: SUPPORT LICENSES

02-Apr-91 Page 1 of 1

| | | | LICENSES | | | | | SUPPORT CONTRACTS | | | | | SUPPORT | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | PM | PA | ORD | RIM | ADS+ | PM | PA | ORD | RIM | ADS+ | REVENUE | COMMENTS |
| | Count: | | 44 | 27 | 14 | 3 | 42 | 23 | 20 | 4 | 3 | 31 | 951,360 | TOTAL |
| | % on Support: | | | | | | | 52% | 74% | 29% | 100% | 74% | 673,920 | PCS |
| | Not on Support: | | | | | | | 21 | 7 | 10 | 0 | 11 | 277,440 | ADS PLUS |
| *Baptist Med Ctr* | *Kansas City* | *MO* | *PM* | *PA* | | | *ADS+* | *PM* | *PA* | | | *ADS+* | *25,920* | *signed 8/90* |
| * *Carle Clinic* | *Urbana* | *IL* | *PM* | *PA* | | | *ADS+* | *PM* | *PA* | | | *ADS+* | *41,280* | *signed 9/90* |
| Cedars-Sinai | Los Angeles | CA | PM | | | | ADS+ | PM | | | | ADS+ | 24,960 | signed 6/90 |
| * *Columbia Presby* | *New York* | *NY* | *PM* | *PA* | *ORD* | | *ADS+* | | | | | | *0* | *expected* |
| * Crawford-Long + | Atlanta | GA | PM | | | | ADS+ | PM | | | | ADS+ | 15,360 | 9/90, poss. PA |
| Duke University | Durham | NC | PM | | | | | | | | | | 0 | |
| * *Emory University +* | *Atlanta* | *GA* | *PM* | *PA* | | | *ADS+* | *PM* | *PA* | | | *ADS+* | *41,280* | *signed 9/90* |
| * *Genesee Hospital* | *Genesee* | *NY* | *PM* | *PA* | | | *ADS+* | *PM* | *PA* | | | *ADS+* | *41,280* | *signed 3/91* |
| * *Good Samaritan* | *West Palm B* | *FL* | *PM* | *PA* | *ORD* | | *ADS+* | *PM* | *PA* | *ORD* | | *ADS+* | *0* | *lease coverage* |
| * *Grant Hospital* | *Columbus* | *OH* | *PM* | *PA* | | | *ADS+* | | | | | | *0* | *rejected* |
| * *Greater Southeast* | *Washington* | *DC* | *PM* | *PA* | | | *ADS+* | *PM* | *PA* | | | *ADS+* | *31,680* | *signed 10/90* |
| * *Heartland Hosp* | *St. Joseph* | *MO* | *PM* | *PA* | | | *ADS+* | *PM* | *PA* | | | *ADS+* | *41,280* | *signed 10/90* |
| High Plains Baptist | Amarillo | TX | PM | | | RIM | ADS+ | | | | RIM | ADS+ | 21,600 | signed 2/91 |
| Hospital Center | Orange | NH | PM | | | | ADS+ | | | | | | 0 | |
| * *Howard University* | *Washington* | *DC* | *PM* | *PA* | | | *ADS+* | *PM* | | | | *ADS+* | *0* | *ADS+ lease* |
| Lahey Clinic | Burlington | MA | PM | | | | ADS+ | | | | | ADS+ | 9,600 | signed ADS only |
| * *Lancaster General* | *Lancaster* | *PA* | *PM* | *PA* | *ORD* | *RIM* | *ADS+* | *PM* | *PA* | *ORD* | *RIM* | *ADS+* | *62,880* | *signed 10/90* |
| * *Memorial Hospital* | *Houston* | *TX* | *PM* | *PA* | | | *ADS+* | *PM* | *PA* | | | *ADS+* | *41,280* | *signed 9/90* |
| * *Mercy Hospital* | *Aurora* | *IL* | *PM* | *PA* | | | *ADS+* | *PM* | *PA* | | | *ADS+* | *41,280* | *signed 1/91* |
| * *Mercy Hosp & Med Ct* | *Chicago* | *IL* | *PM* | *PA* | | | | *PM* | *PA* | | | | *31,680* | *9/90, not ADS+* |
| * *Mercy Hosp Med Ctr* | *Baltimore* | *MD* | *PM* | *PA* | *ORD* | | *ADS+* | *PM* | *PA* | | | *ADS+* | *41,280* | *signed 11/90* |
| New England Deacon | Boston | MA | PM | | | | ADS+ | | | | | ADS+ | 9,600 | signed ADS only |
| Newark Beth Israel | Newark | NJ | PM | | ORD | | ADS+ | | | | | | 0 | |
| *der St. Francis* | *Peoria* | *IL* | *PM* | *PA* | *ORD* | | *ADS+* | | | | | | *0* | *rejected* |
| *os Community* | *Palos Heights* | *IL* | *PM* | *PA* | | | *ADS+* | *PM* | *PA* | | | *ADS+* | *42,480* | *signed 11/90* |
| * *Research Health* | *Kansas City* | *MO* | *PM* | *PA* | | | *ADS+* | *PM* | *PA* | | | *ADS+* | *41,280* | *signed 9/90* |
| St Elizabeth | Youngstown | OH | PM | PA | | | ADS+ | | | | | ADS+ | 0 | 1/91 lease |
| St Elizabeth's | Elizabeth | NJ | PM | | ORD | | ADS+ | | | | | | 0 | |
| * *St Francis* | *Hartford* | *CT* | *PM* | *PA* | | | *ADS+* | | | | | | *0* | *not expected* |
| * *St Vincent* | *Portland* | *OR* | *PM* | *PA* | *ORD* | | *ADS+* | *PM* | *PA* | *ORD* | | *ADS+* | *50,880* | *signed 10/90* |
| Santa Rosa | San Antonio | TX | PM | | | | ADS+ | | | | | | 0 | |
| Schumpert Med Ctr | Shreveport | LA | PM | | ORD | | ADS+ | | | | | | 0 | |
| Shands, U of Florida | Gainesville | FL | PM | | | | ADS+ | | | | | | 0 | |
| * *SW Texas Methodist* | *San Antonio* | *TX* | *PM* | *PA* | | | *ADS+* | *PM* | *PA* | | | *ADS+* | *41,280* | *signed 10/90* |
| * *Swedish Hospital* | *Seattle* | *WA* | *PM* | *PA* | | | *ADS+* | *PM* | *PA* | | | *ADS+* | *59,400* | *signed 9/90* |
| * *Tucson Med Ctr* | *Tucson* | *AZ* | *PM* | *PA* | | | *ADS+* | *PM* | *PA* | | | *ADS+* | *45,120* | *signed 9/90* |
| United Hospitals | Penneauken | NJ | PM | | ORD | | ADS+ | | | | | ADS+ | 9,600 | signed ADS only |
| Univ of Michigan | Ann Arbor | MI | PM | PA | ORD | | ADS+ | | | | | ADS+ | 9,600 | signed 10/90 |
| * *Univ of Missouri* | *Columbia* | *MO* | *PM* | *PA* | | | *ADS+* | *PM* | *PA* | | | *ADS+* | *41,280* | *signed 9/90* |
| Univ of Texas | Tyler | TX | PM | | ORD | | ADS+ | | | | | ADS+ | 0 | lease coverage |
| Virginia Mason | Seattle | WA | PM | | | | ADS+ | | | | | ADS+ | 27,720 | signed 1/91 |
| Visiting Nurse Svc | New York | NY | PM | | | | ADS+ | | | | | | 0 | |
| Washington County | Hagerstown | MD | PM | | ORD | | ADS+ | | | | | ADS+ | 9,600 | signed ADS only |
| * *Wesley Hospital* | *Wichita* | *KS* | *PM* | *PA* | *ORD* | *RIM* | *ADS+* | *PM* | *PA* | *ORD* | *RIM* | *ADS+* | *50,880* | *signed 10/90* |

* *IBM Customer Satisfaction Program*

Blank areas represent
Support opportunities

**BEST COPY AVAILABLE**

# SERIES 5000 CLINICAL CARE SYSTEM

- Order Entry Ancillary Response
  - Order Entry
    - By department
    - Add-on orders
    - Downtime orders
    - Order sets
      - By physician
      - By dept.
      - By procedure
    - Duplicate order checks
    - Pharmacy quick order
    - PRN order
    - Order explosion
    - Order modification
    - Display orders
    - Renew-D/C-cancel
    - Transport requests
  - Ancillary Response
    - Online worklists
      - RCP/accession
      - Enter results
      - Verify results
      - Correct results
      - RICP
    - Online charge/credit
      - Test
      - Related procedure
      - Miscellaneous
    - Display requisitions
    - Display results
      - Formatted
      - Cummulative
      - Scrolled
    - Display specimen board
  - Physician Support
    - Electronic signature
    - Signed orders
    - Patient lists
    - Post-up notes
    - Data retrieval
    - Patient profile
    - Patient location
    - House census
    - Reports
    - Order sets
  - Messages
    - On-call schedules
    - Bulletin board
    - Prints
  - References
    - Patient instructions
    - Calculators
    - Phone numbers
    - Translators
    - Pediatric prints

# SERIES 5000

## RELEASE 10

## FINANCIAL SYSTEM ENHANCEMENTS

- Regulatory Enhancements
    - Universal Physician ID Number
    - Physical Therapy
    - Durable Medical Equipment
    - Group Provider ID Number
- Data Base Purge Features
- Automatic Generation of Month-End Episodes for recurring patients
- BTS re-write to combine clinical and financial BTS called Batch Transaction Scheduler Plus (BTS+)
- Change to Zero Billing Category Record processing to improve DASD utilization and system performance
- Annual update to Champus Grouper
- Addition of Reservation Data Base Purge Feature
- Screen performance enhancement for Appointment Scheduling
- Addition of resend function to the Standard Interface System (SIS)

## SERIES 5000

# CLINICAL UPDATE

APRIL 8, 1991

# CLINICAL CARE SYSTEM
# RELEASE 10

## NEW DEVELOPMENT

## PRODUCT ENHANCEMENTS

## RELEASE 10

# SPECIALTY CHARTING

- PROFILABLE
- DEPARTMENT DEFINED
- INTERDISCIPLINARY

## RELEASE 10

# SPECIALTY CHARTING

- DEVELOPED UNDER SDM
- 5 HOSPITALS, FIELD SERVICES AND SALES
- BEGAN APRIL 1990

## RELEASE 10

# SPECIALTY CHARTING

- FUNCTIONAL SPECIFICATION
- PROTOTYPE
- TECHNICAL WALKTHROUGH
- CODING
- INTERNAL TESTING
- BETA TESTING
- GENERAL RELEASE

## SPECIALTY CHARTING
# BENEFITS

- QUICK, EASY, USER FRIENDLY
- INCREASE PRODUCTIVITY
- INCREASE DIRECT PATIENT CARE HOURS
- EFFICENT ENTRY AND RETRIEVAL
- IMPROVE ACCURACY AND LEGIBILITY
- ON-LINE PROFILING FOR INPUT AND UPDATE

## RELEASE 10

# MEDICATION CHARTING

- COMPLETE AUDIT TRAIL
- DOCUMENT ADMINISTRATION INFO
- AUTOMATIC UPDATE OF I&O, VS & UNIT TESTS
- ONLINE DISPLAYS

# RELEASE 10
# ENHANCEMENTS

- ENH CHARGE/CREDIT ADDED TO 10 ADD'L DEPT
- COMBINED RELATED DEPARTMENTS
- D/C ORDER SESSION SUMMARY AT PATIENT LOCATION
- 12 HOUR OCCURANCE REPORT TABLE
- PRN FREQUENCY ADDED TO 7 DEPARTMENTS

# RELEASE 10
# ENHANCEMENTS

- HEPARIN/COUMADIN CLINICAL SCREEN UPDATED
- COMBINED RELATED DEPARTMENTS
- CARE PLAN OUTCOME FILES ACCESSABLE FROM D/P
- CHARTING MODIFIERS MADE OPTIONAL

## RELEASE 10

# ENHANCEMENTS

- PURGE PROGRAMS

  ORDER SETS DATA BASE

  NOTES AND ARCHIVE NOTES DATABASE

  ON CALL DATABASE

# Spectrum Long Term Architectural Strategy

*A Ten Year View*

| Today | Tomorrow | The Future |
|---|---|---|
| *A Unified Solution from Spectrum* | *Advanced Clinical Solutions* | *Advanced HIS Architectures* |

# Spectrum Long Term Architectural Strategy

## Today

Unified Solutions

- *Integrated and Interfaced Approach*
- *Spectrum Products and Third Party Products*
- *Single Vendor Support from Spectrum*

Unified Solutions will be Facilitated by our Application Integration Architecture

Advanced Clinical Solutions will Begin to be Added

- *Advanced Physician Workstation in Development Now*

# Spectrum Long Term Architectural Strategy

## Tomorrow

Advanced Clinical Solutions

- *New Relational Patient Centered Data Bases*
- *Image and Voice will be Supported*

New Database Architecture will Support:

- *Automated Patient Record*
- *Clinical Decision Support*
- *Quality Applications*
- *Protocols and Guidelines*

New Clinical Applications will be Integrated with Todays HIS Systems

# Spectrum Long Term Architectural Strategy

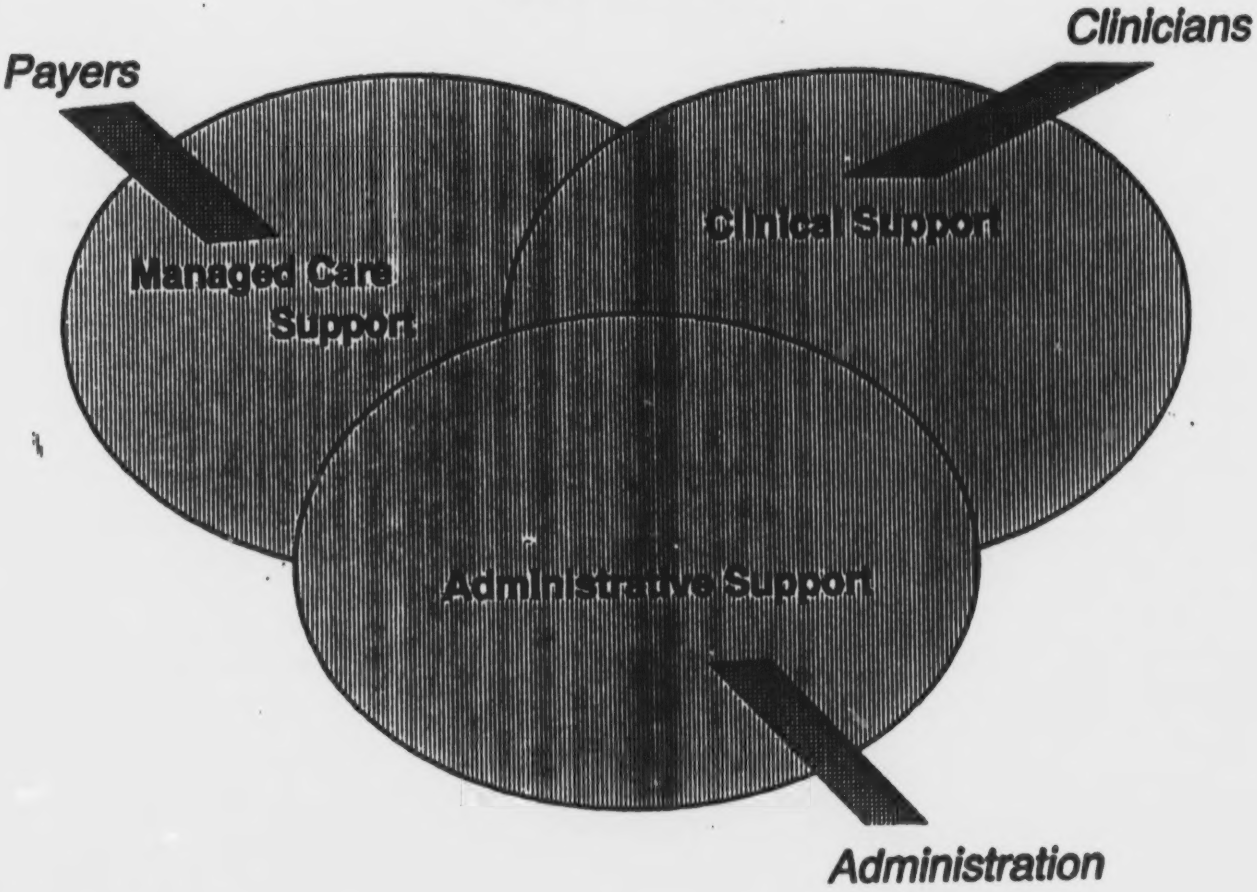
## The Future

Advanced HIS Architectures

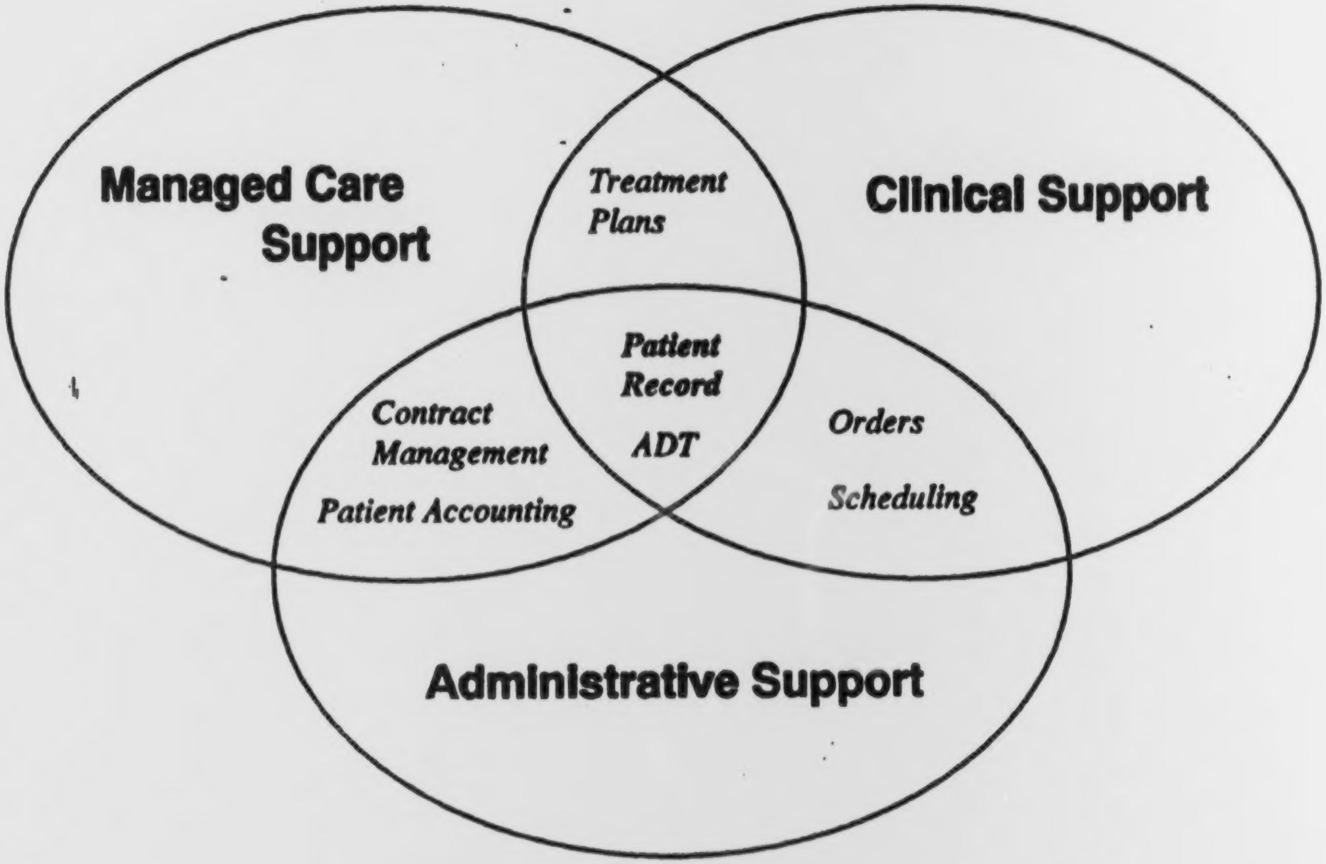
- *Distributed Network Solutions*
- *Cooperative Processing*
- *Logical Patient Centered Database*
- *Productive and Flexible Development Environments*
- *Open Architectures Supported by Industry Standards*

An Evolutionary Migration Path will Preserve Customers Investments

# HIS Functionality Model
## 1991 - 1995


Clinicians
Payers
Clinical Support
Managed Care Support
Administrative Support
Administration

# HIS Functionality Model
# 1991 - 1995



**Managed Care Support**

**Clinical Support**

**Administrative Support**

*Treatment Plans*

*Patient Record*

*ADT*

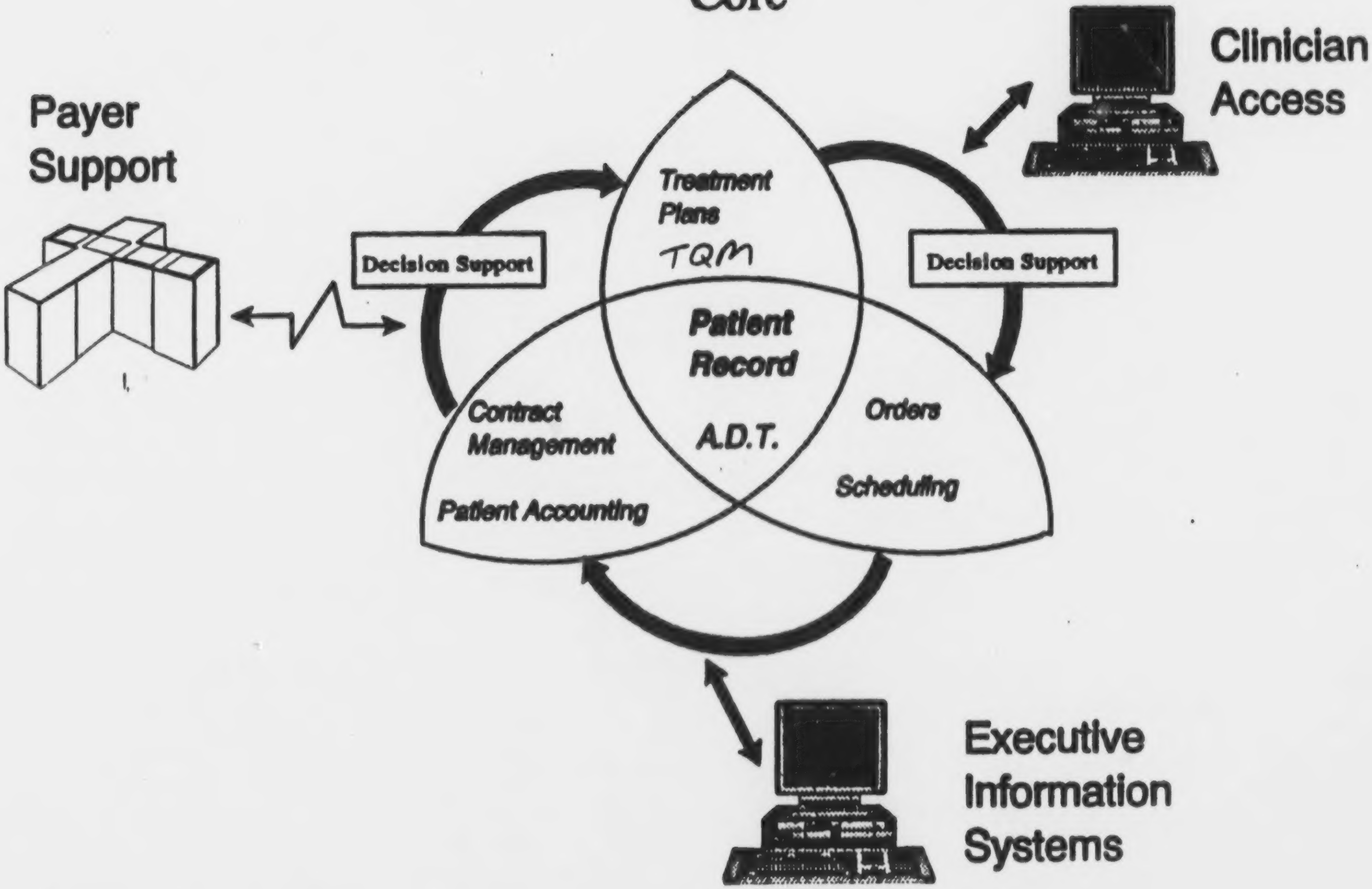
*Contract Management*

*Patient Accounting*

*Orders*

*Scheduling*

# HIS Functionality Model
# Integrated Patient Management
# Core



**Payer Support**

Decision Support

*Treatment Plans*

TQM

***Patient Record***

*A.D.T.*

**Clinician Access**

Decision Support

*Contract Management*

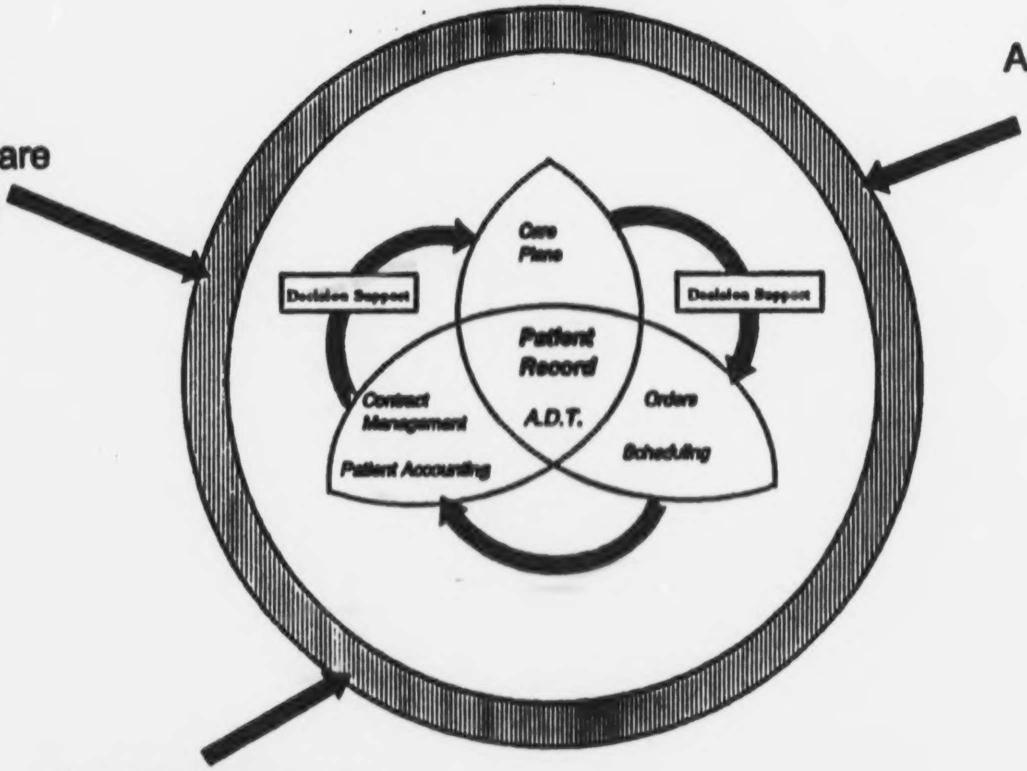
*Patient Accounting*

*Orders*

*Scheduling*

**Executive Information Systems**

# HIS Functionality Model Application Integration Architecture



Advanced Clinical Modules

Managed Care Modules

Care Plans

Decision Support

Decision Support

Patient Record

Contract Management

A.D.T.

Orders

Patient Accounting

Scheduling

Administrative Support Modules

# HIS Functionality Model
## Application Integration Architecture

### *Phase I*

Spectrum will Develop a Standard Approach to Interfacing Systems

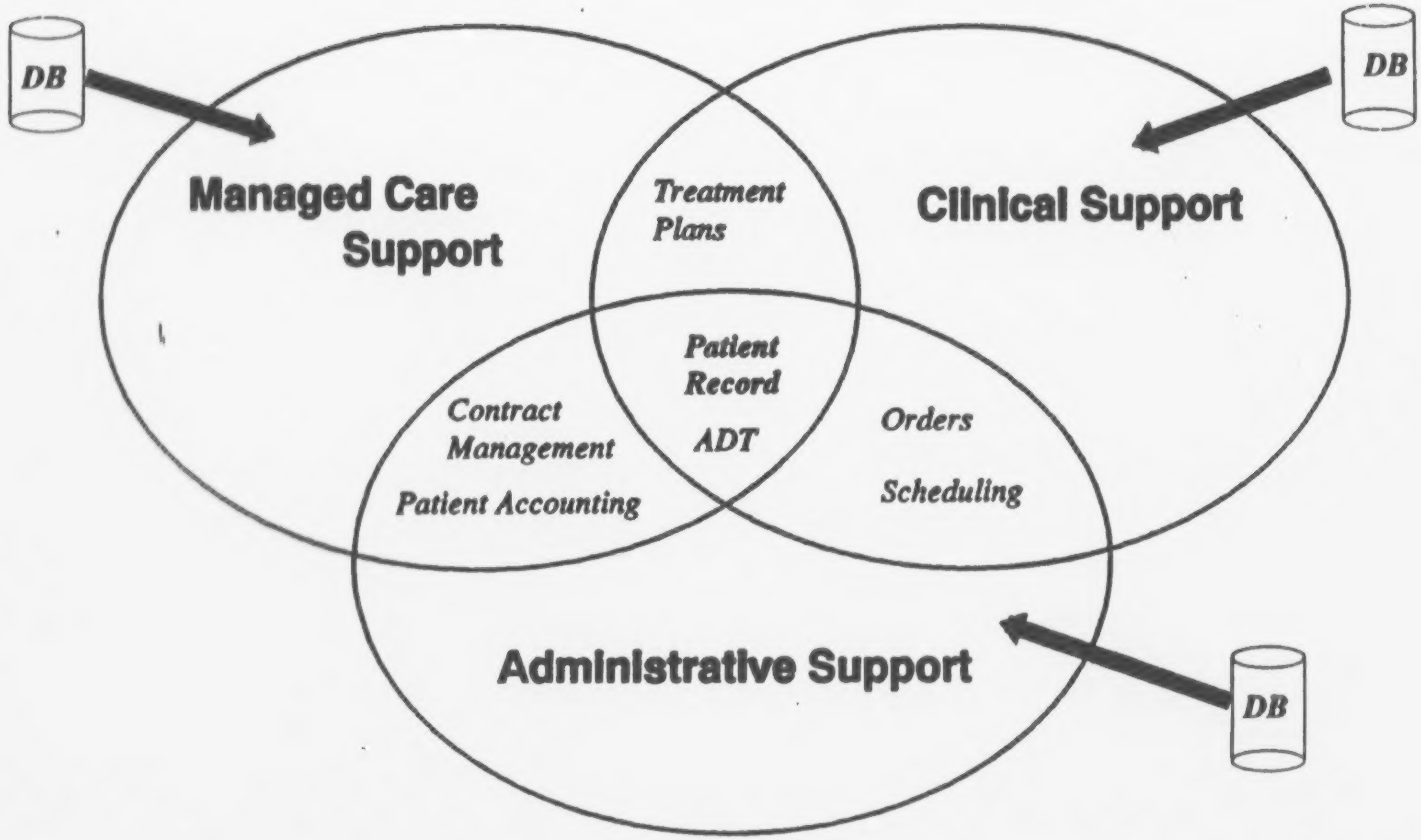
### *Phase II*

Spectrum will Develop a Data Standard which will Be Applied Consistently Accross all Product Lines

This New Standard will define the Internal Data Definitions and be Consistent with the Developing Industry Standards as They Evolve

*HL7*
*HCFA Clinical Data Set*
*MEDIX*
*IOM*
*and others*

# HIS Functionality Model
# 1991 - 1995



DB

DB

DB

**Managed Care Support**

**Clinical Support**

**Administrative Support**

*Treatment Plans*

*Patient Record*

*ADT*

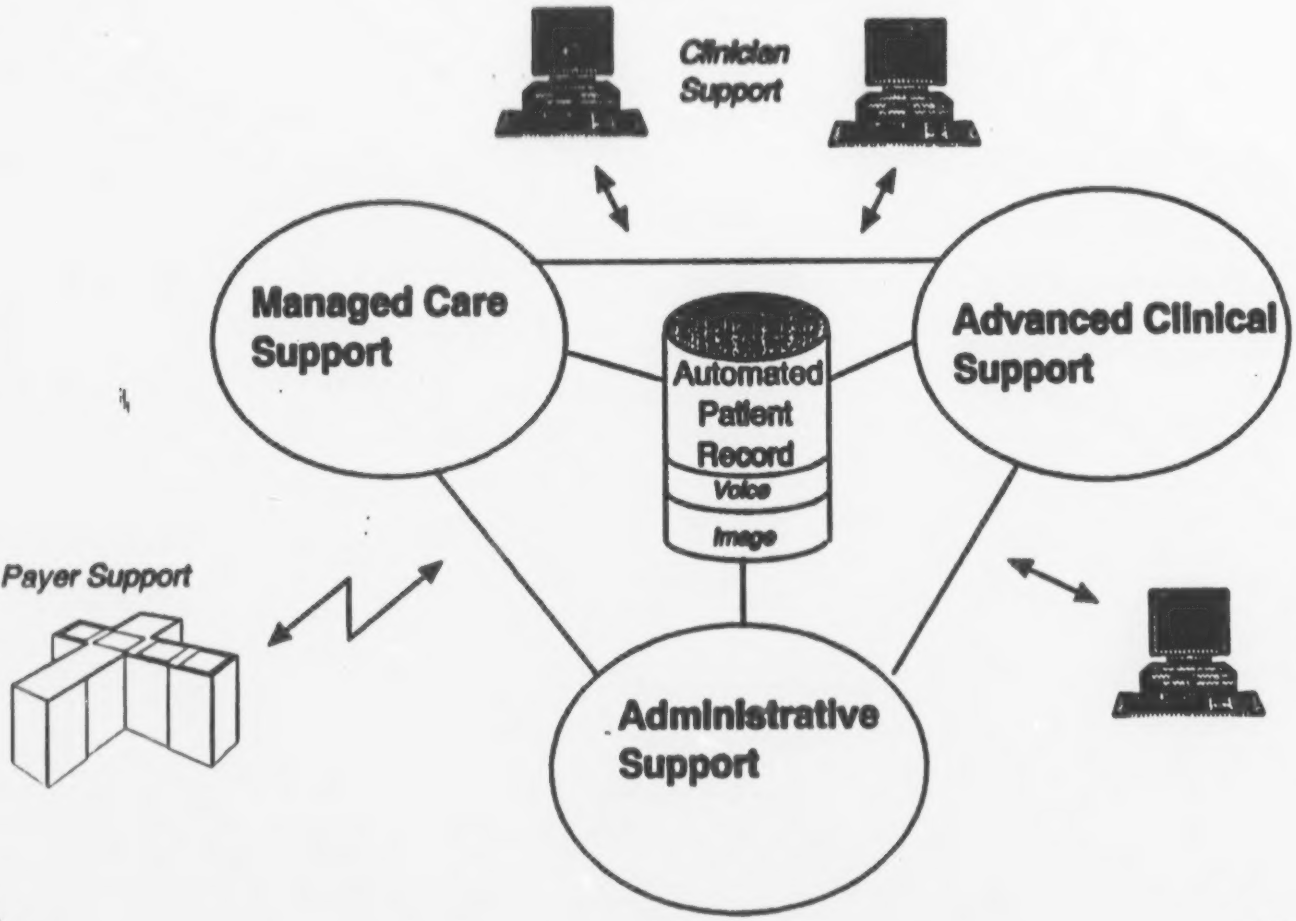
*Contract Management*

*Patient Accounting*

*Orders*

*Scheduling*

# HIS Functionality Model
## 1995 - 2000



*Clinician Support*

**Managed Care Support**

**Advanced Clinical Support**

Automated Patient Record

*Voice*

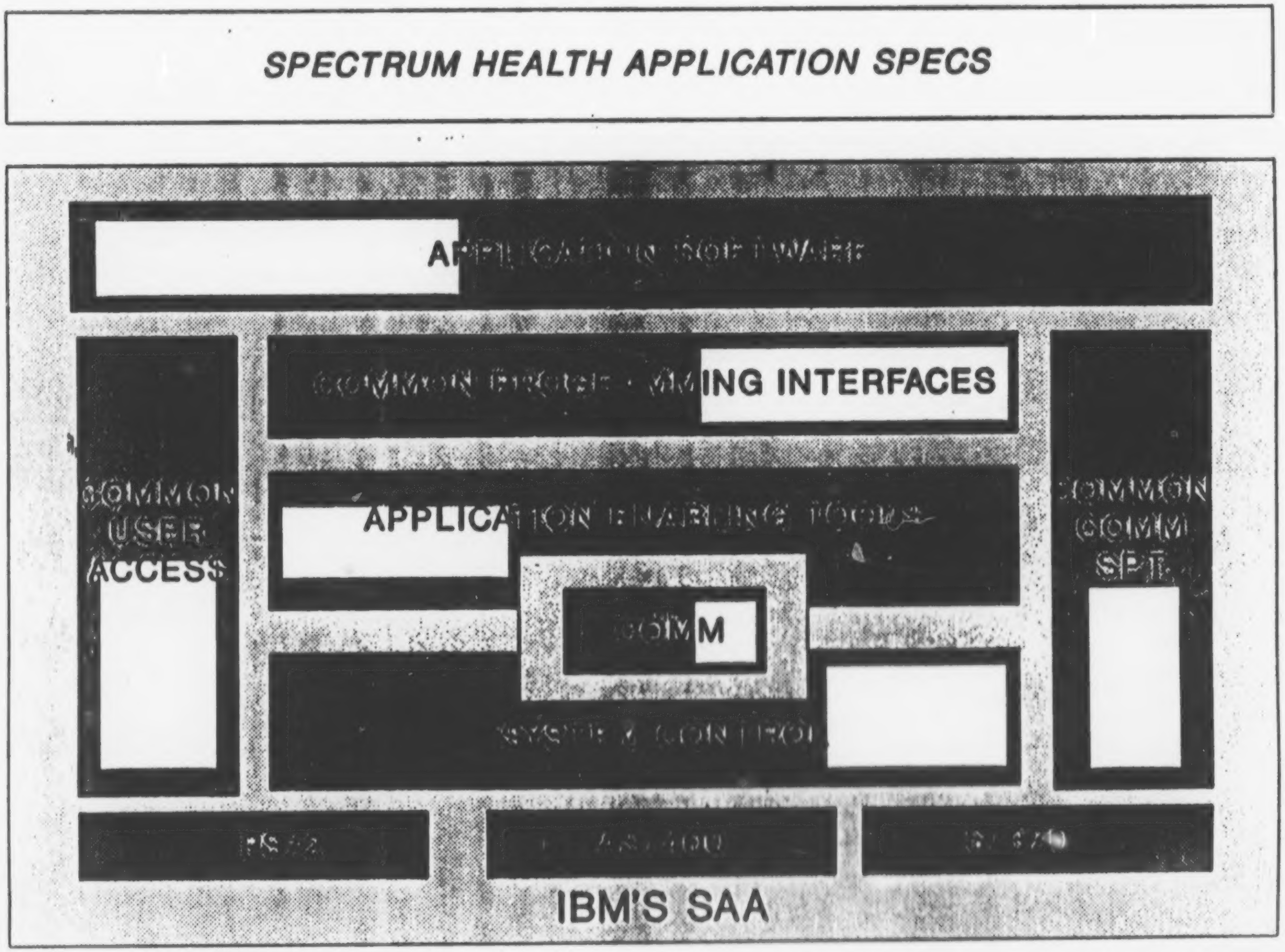
*Image*

*Payer Support*

*Executive Support*

**Administrative Support**

# "H/SAA" IS BOTH A SUBSET AND A SUPERSET OF SAA



*SPECTRUM HEALTH APPLICATION SPECS*

APPLICATION SOFTWARE

COMMON PROGRAMMING INTERFACES

COMMON USER ACCESS

APPLICATION ENABLING TOOLS

COMMON COMM SPT

COMM

SYSTEM CONTROL

PS/2

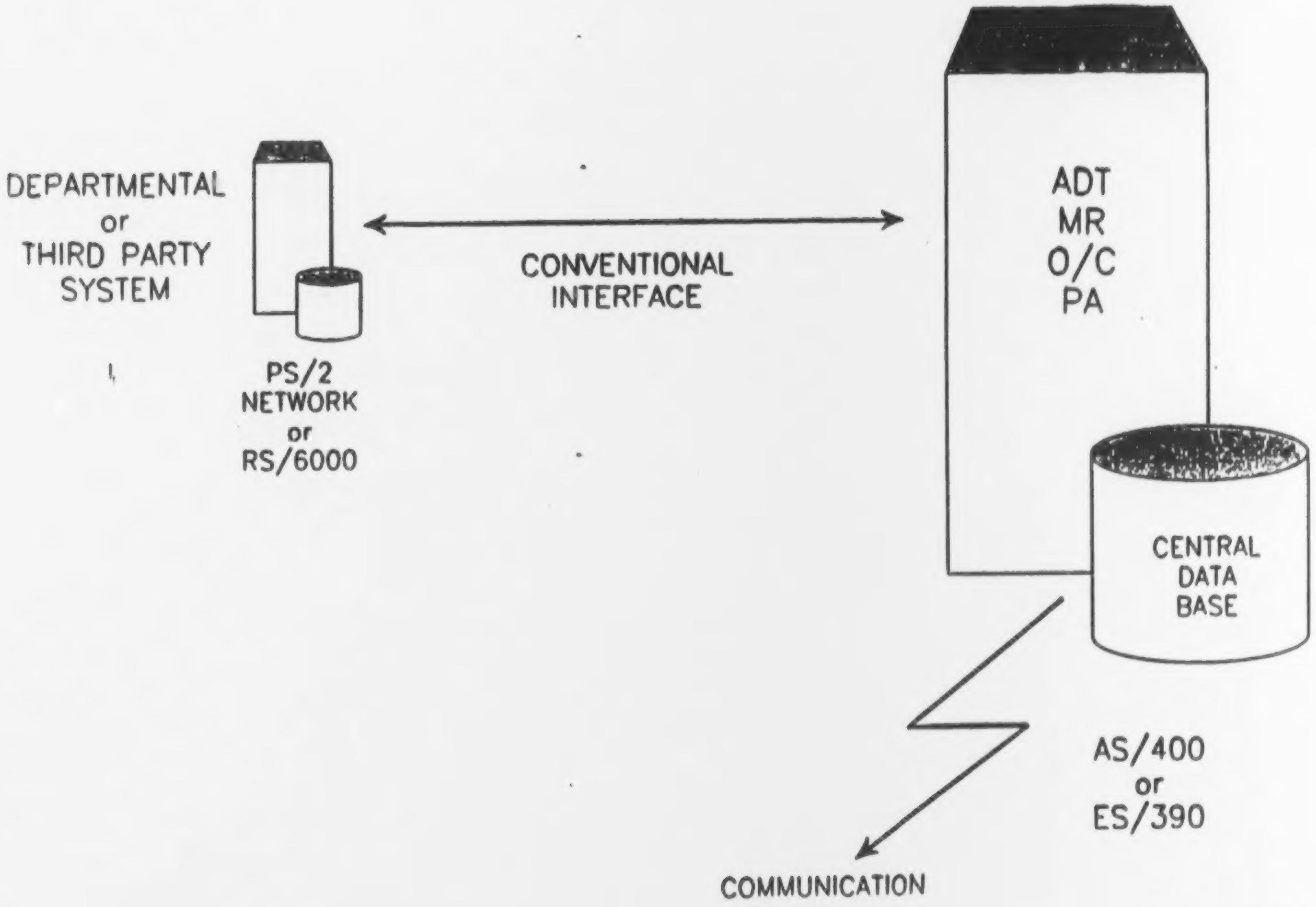
AS/400

S/370

IBM'S SAA

ARCH09

# H/SAA HIS TOPOLOGY
## PHASE 1



DEPARTMENTAL
or
THIRD PARTY
SYSTEM

PS/2
NETWORK
or
RS/6000

CONVENTIONAL
INTERFACE

ADT
MR
O/C
PA

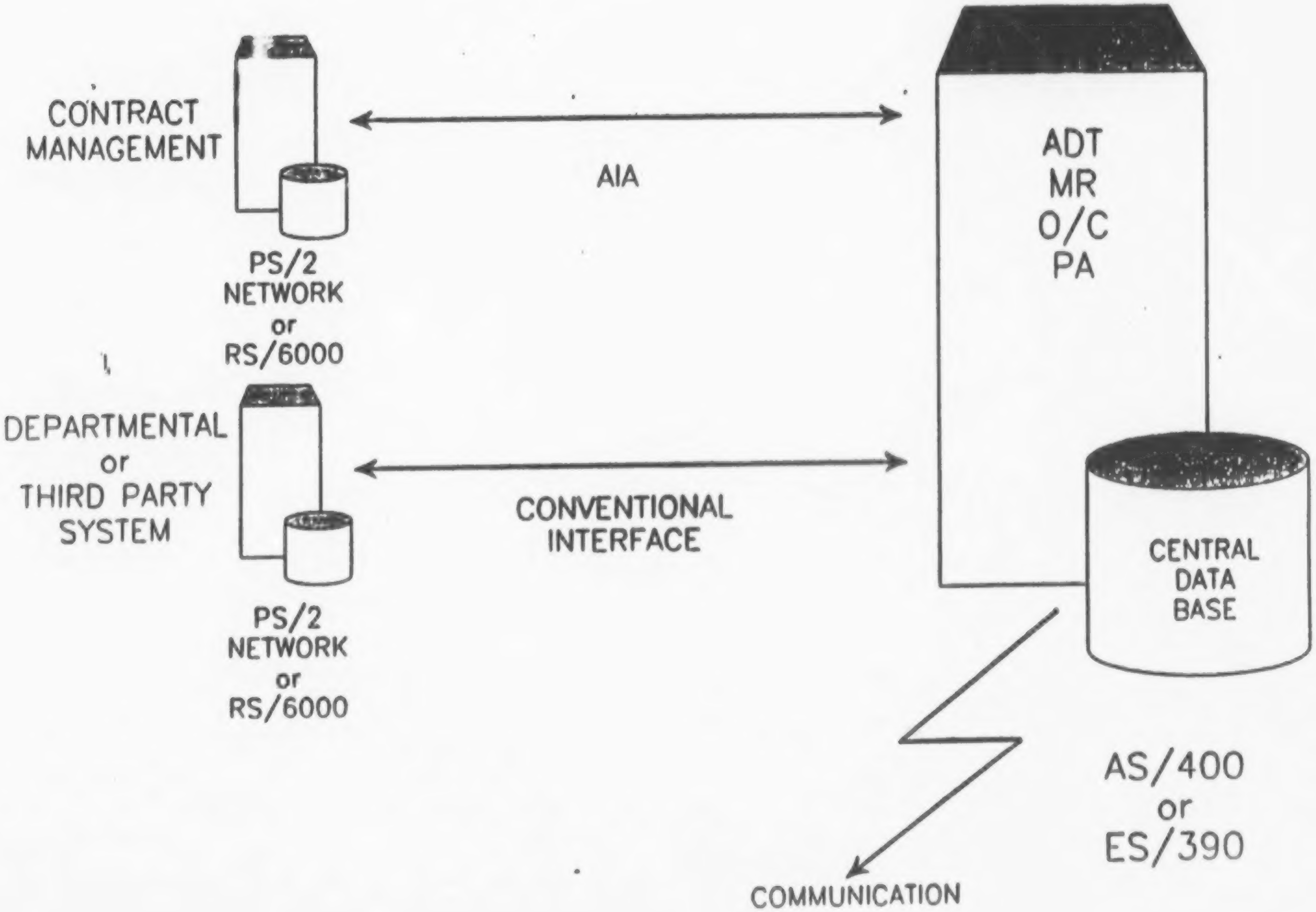
CENTRAL
DATA
BASE

AS/400
or
ES/390

COMMUNICATION

# *H/SAA HIS TOPOLOGY*

## PHASE 2



CONTRACT
MANAGEMENT

PS/2
NETWORK
or
RS/6000

AIA

DEPARTMENTAL
or
THIRD PARTY
SYSTEM

PS/2
NETWORK
or
RS/6000

CONVENTIONAL
INTERFACE

ADT
MR
O/C
PA

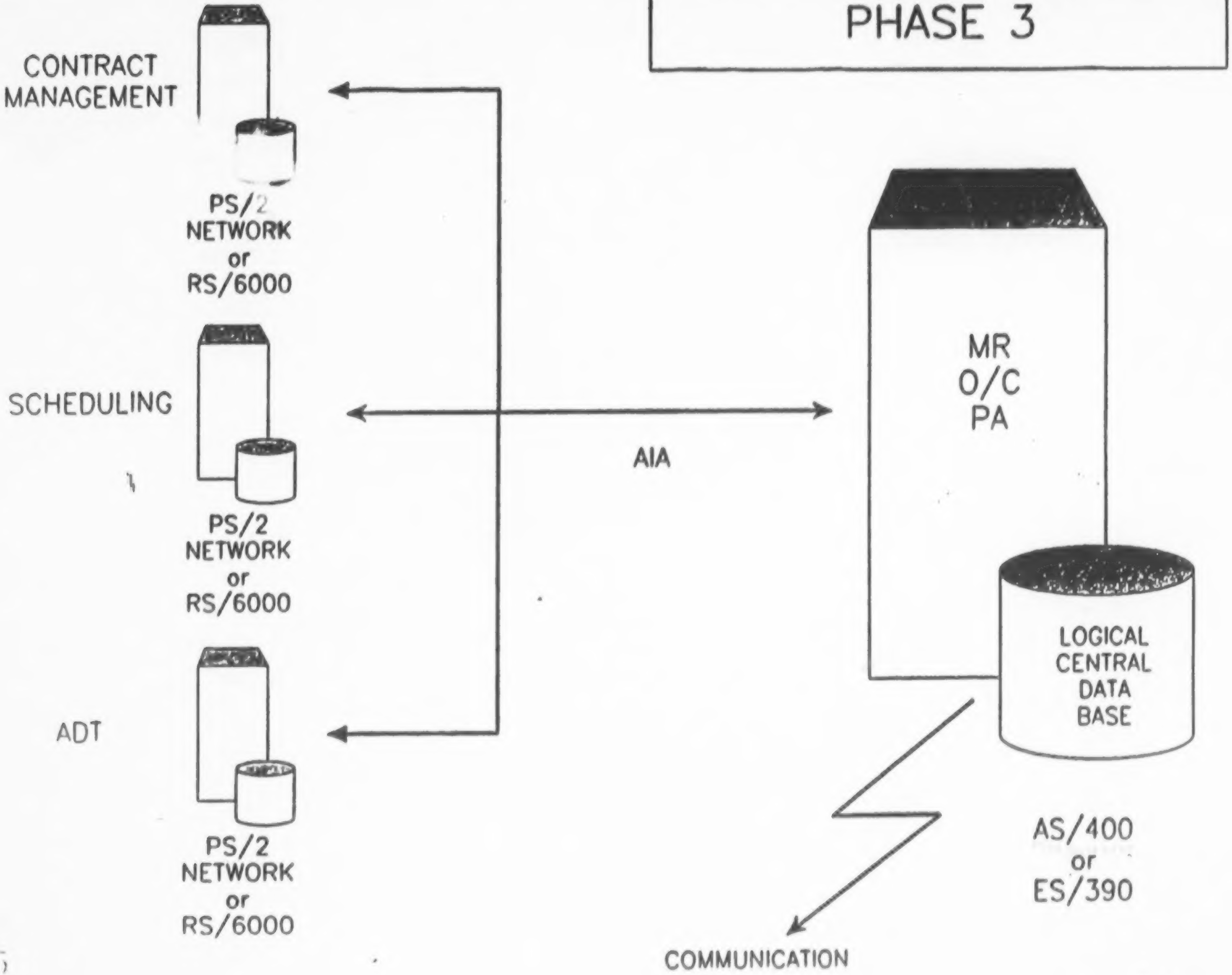
CENTRAL
DATA
BASE

AS/400
or
ES/390

COMMUNICATION

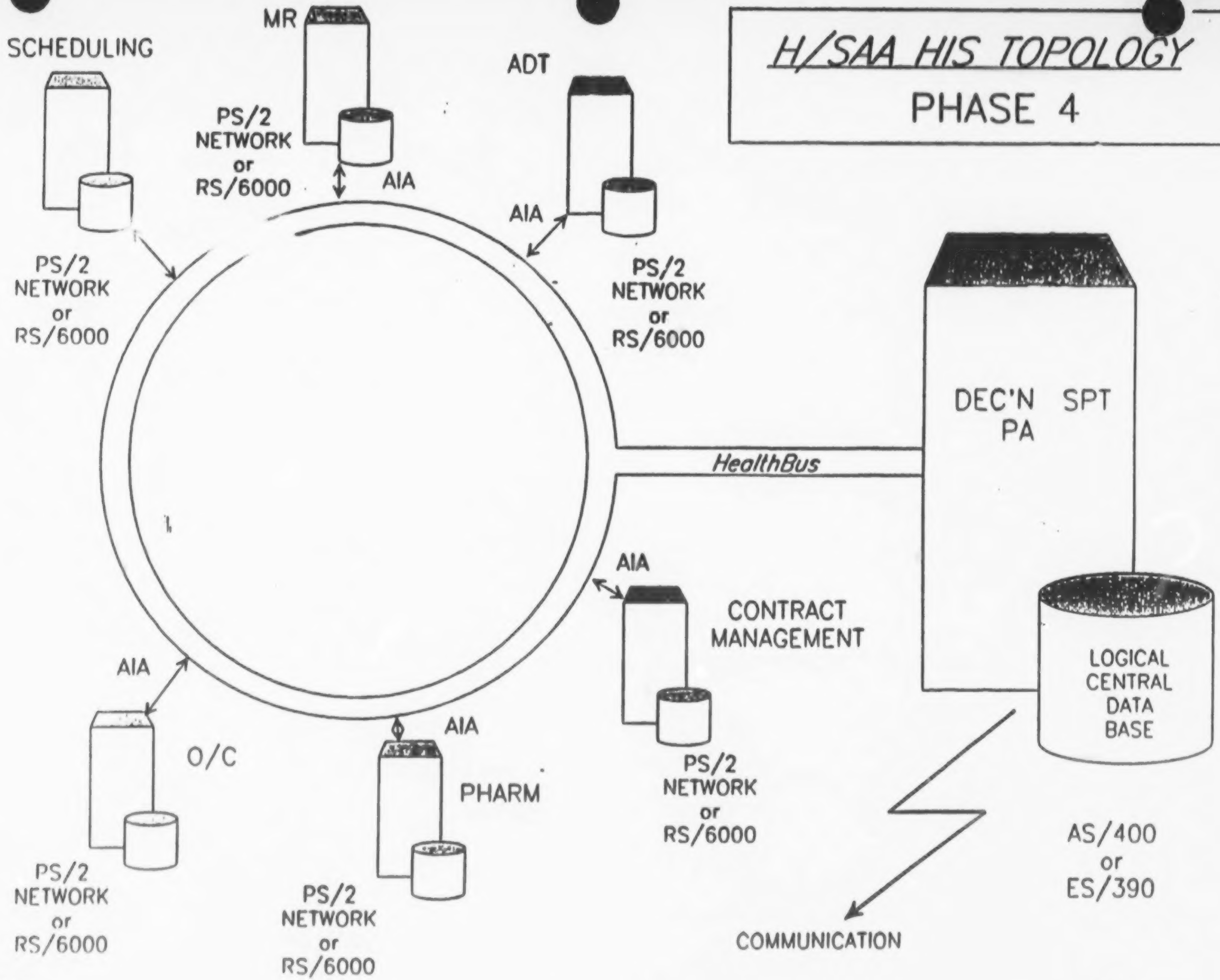
# *H/SAA HIS TOPOLOGY*

## PHASE 3


CONTRACT MANAGEMENT
PS/2 NETWORK or RS/6000
SCHEDULING
PS/2 NETWORK or RS/6000
ADT
PS/2 NETWORK or RS/6000
AIA
MR
O/C
PA
LOGICAL CENTRAL DATA BASE
AS/400 or ES/390
COMMUNICATION

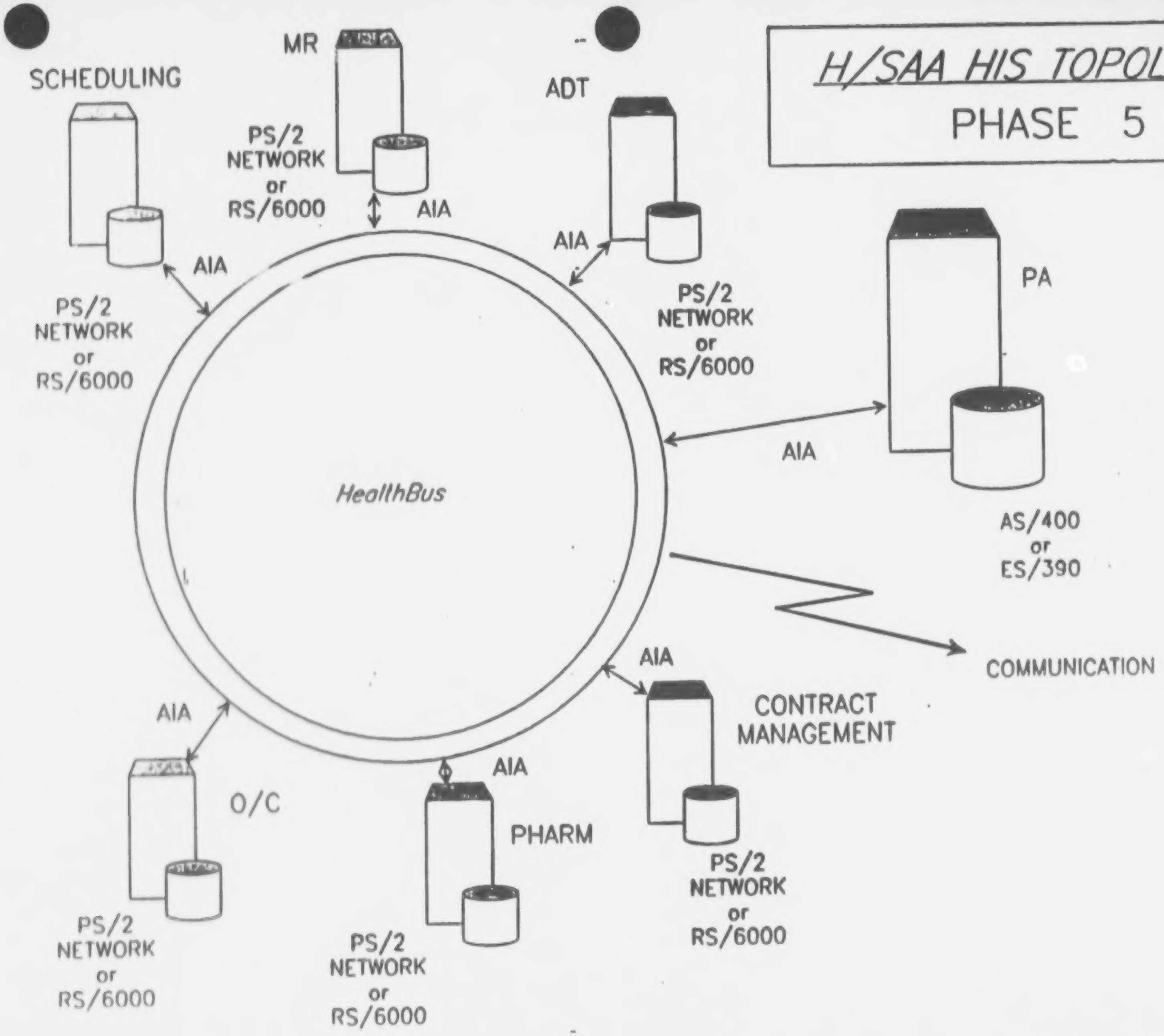
# *H/SAA HIS TOPOLOGY*

## PHASE 4

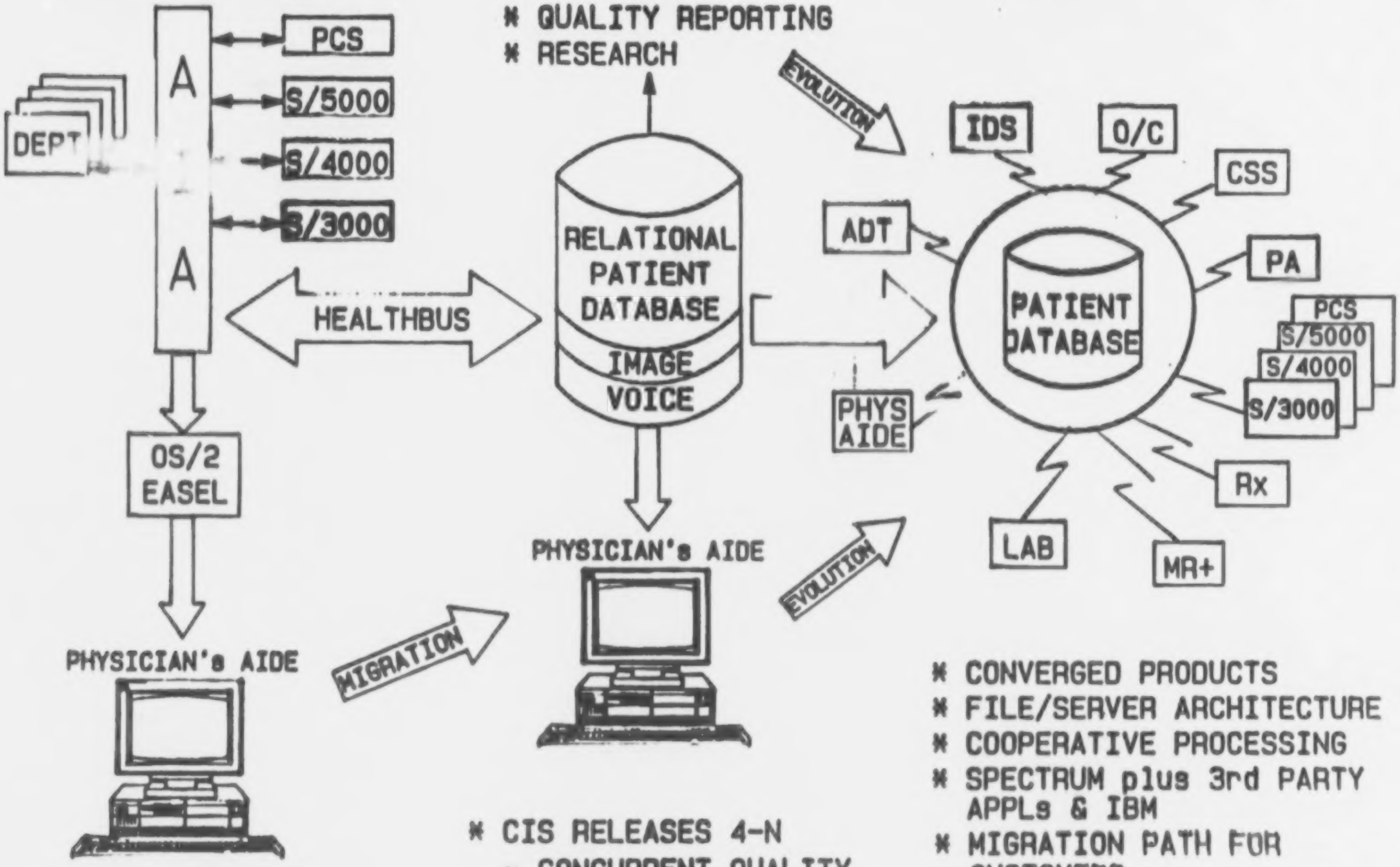

SCHEDULING
PS/2
NETWORK
or
RS/6000
MR
PS/2
NETWORK
or
RS/6000
AIA
ADT
AIA
PS/2
NETWORK
or
RS/6000
HealthBus
DEC'N SPT
PA
LOGICAL
CENTRAL
DATA
BASE
AS/400
or
ES/390
COMMUNICATION
AIA
CONTRACT
MANAGEMENT
PS/2
NETWORK
or
RS/6000
AIA
O/C
PS/2
NETWORK
or
RS/6000
AIA
PHARM
PS/2
NETWORK
or
RS/6000

# *H/SAA HIS TOPOLOGY*

## PHASE 5


SCHEDULING
PS/2 NETWORK or RS/6000
AIA
MR
PS/2 NETWORK or RS/6000
AIA
ADT
AIA
PS/2 NETWORK or RS/6000
PA
AIA
AS/400 or ES/390
HealthBus
COMMUNICATION
AIA
CONTRACT MANAGEMENT
PS/2 NETWORK or RS/6000
AIA
PHARM
PS/2 NETWORK or RS/6000
AIA
O/C
PS/2 NETWORK or RS/6000

# SPECTRUM LONG ERM ARCHITECTURE



(1991-1997)

TODAY's HIS
MANAGED CARE FOCUS

- DEPT
- A
- A
- PCS
- S/5000
- S/4000
- S/3000
- HEALTHBUS
- OS/2 EASEL

PHYSICIAN's AIDE

MIGRATION

- * CIS RELEASE 1-3
  - RESULTS REVIEW
  - ORDER ENTRY

(1 -1997)

CIS

- * QUALITY REPORTING
- * RESEARCH

RELATIONAL
PATIENT
DATABASE
IMAGE
VOICE

PHYSICIAN's AIDE

- * CIS RELEASES 4-N
  - CONCURRENT QUALITY ASSURANCE
  - CLINICAL PROTOCOLS
  - DIAGNOSTIC ASSISTANCE

EVOLUTION

EVOLUTION

(1997-2007)

FUTURE
HIS/CIS

PATIENT
DATABASE

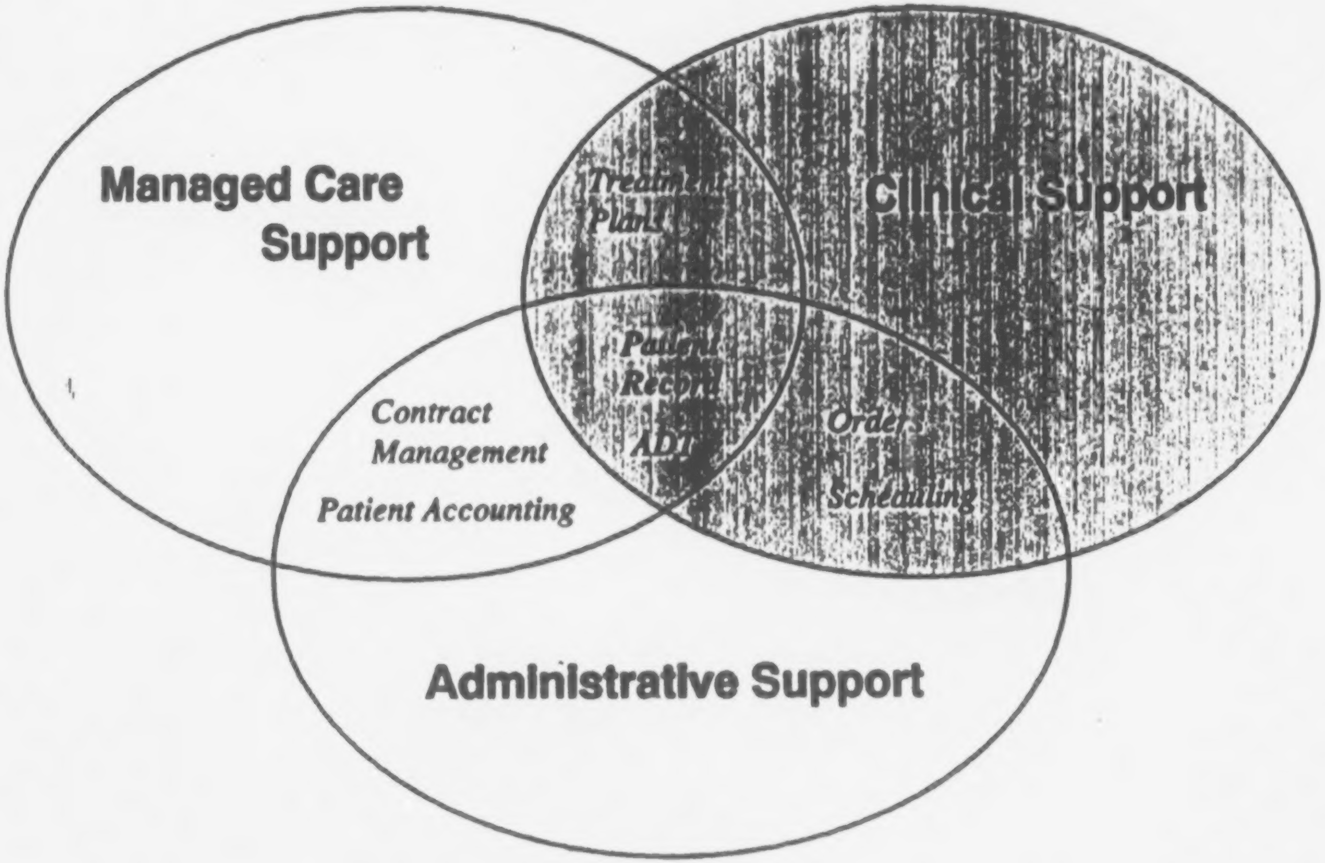
- IDS
- O/C
- CSS
- ADT
- PA
- PCS
- S/5000
- S/4000
- S/3000
- PHYS AIDE
- Rx
- LAB
- MR+

- * CONVERGED PRODUCTS
- * FILE/SERVER ARCHITECTURE
- * COOPERATIVE PROCESSING
- * SPECTRUM plus 3rd PARTY APPLs & IBM
- * MIGRATION PATH FOR CUSTOMERS

SB/FLB/MTH

BEST COPY AVAILABLE

# HIS Functionality Model
# 1991 - 1995



**Managed Care Support**

**Clinical Support**

**Administrative Support**

*Treatment Plans*

*Patient Record*

*ADT*

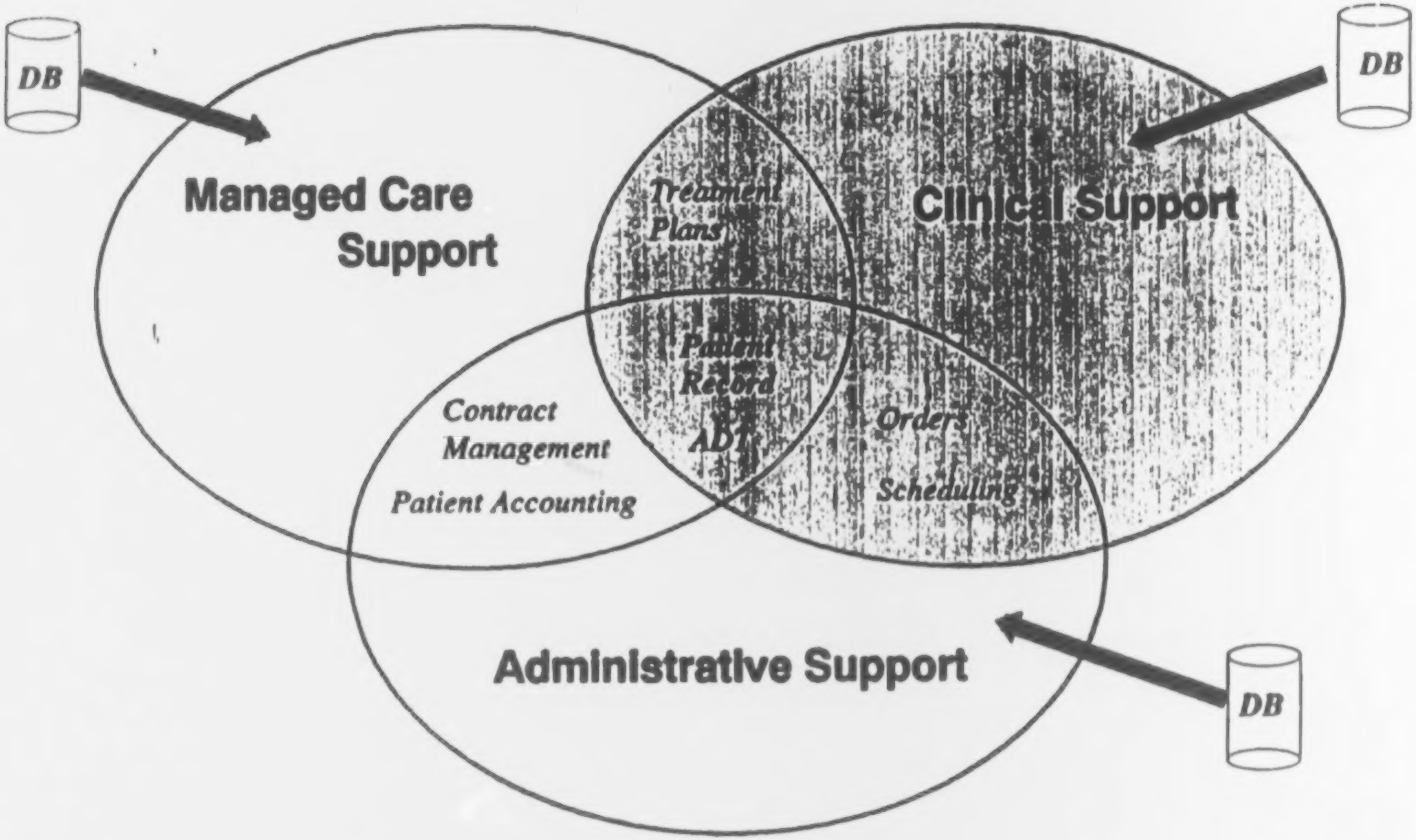
*Order*

*Scheduling*

*Contract Management*

*Patient Accounting*

# HIS Functionality Model
## 1991 - 1995



DB

DB

DB

**Managed Care Support**

**Clinical Support**

**Administrative Support**

*Treatment Plans*

*Patient Record*

*ADT*

*Contract Management*

*Patient Accounting*

*Orders*

*Scheduling*

# APPENDIX I

## FINAL AGENDA

SPECTRUM

## SERIES 5000 PRODUCT TRAINING FOR SALES REPRESENTATIVES

### AGENDA

*Note: There will be a 15-minute break each morning at 10 am and each afternoon at 3 pm.*

| | | |
|---|---|---|
| **Tuesday, April 30** | **1 pm - 5 pm** | |
| 1:00 - 1:30 | Welcome/Strategic Direction | J. Goodman |
| 1:15 - 1:45 | Course overview/pre-test | E. Crystal |
| 1:45 - 2:30 | Overview of product/history | S. Harper/V. Spicer |
| 2:30 - 4:15 | Services and Support | B. Grambly |
| 4:15 - 5:15 | Operating environment | S. Harper/V. Spicer |
| **Wednesday, May 1** | **8:30 - 5:00** | |
| 8:30 - 11:00 | Financial Core/Med Records | J. Carraciolo |
| 11:30 - 12:00 | Appointment Scheduling | V. Spicer |
| 12:00 - 12:45 | Lunch | " |
| 12:45 - 1:15 | Resources/Sales Collateral available | " |
| 1:15 - 1:45 | Contracts | F. Martin/R. Phelps |
| 1:45 - 2:45 | Series 5000 business partners | S. Harper |
| 2:45 - 3:45 | Departmentals | S. Harper |
| 3:45 - 5:00 | Prospect Profiles/Market Segments | S. Harper/V. Spicer |

**Thursday, May 2 8:30 am - 4 pm**

| | | |
|---|---|---|
| 8:30 - 11:45 | Clinical Core/Release 10 | V. Spicer |
| 11:45 - 12:30 | Lunch | |
| 12:30 - 1:30 | S5000 Strategic Direction | W. Suika |
| 1:30 - 2:00 | Pricing | " |
| 2:00 - 3:30 | Competitive Information | Activity |
| 3:30 - 4:00 | Review/Post-test | E. Crystal |

# APPENDIX J

## STUDENT EVALUATION FORM

## SERIES 5000 TRAINING SESSION

### Day 1 Evaluation

| | Excellent | Good | Fair | Poor |
|---|---|---|---|---|
| 1. Rate the **OVERALL** value of today's session | X | | | |
| 2. Rate the value of today's topics: | | | | |
| ◆ Welcome/Strategic Direction | X | | | |
| ◆ Course overview | X | | | |
| ◆ Product overview | X | | | |
| ◆ Product history | | | | |
| ◆ Services & Support | | X | | |
| ◆ Operating environment | | | | |

3. What was today's most effective segment? Why?

Scott Harper - Good foundation for subsequent session

4. What was today's least effective segment? Why?

Reduce Implementation to 1 Hr.

5. How would you improve today's session?

See 4

6. Were the course materials appropriate? Why or why not?

Yes -

7. Additional comments may be recorded on the reverse of this page.

## SERIES 5000 TRAINING SESSION

### Day 1 Evaluation

| | Excellent | Good | Fair | Poor |
|---|---|---|---|---|
| 1.Rate the **OVERALL** value of today's session | ✓ | | | |
| 2. Rate the value of today's topics: | | | | |
| ◆ Welcome/Strategic Direction | | ✓ | | |
| ◆ Course overview | ✓ | | | |
| ◆ Product overview | ✓ | | | |
| ◆ Product history | ✓ | | | |
| ◆ Services & Support | ✓ | | | |
| ◆ Operating environment | | | | |

3. What was today's **most** effective segment? Why?

4. What was today's **least** effective segment? Why?

5. How would you improve today's session?

6. Were the course materials appropriate? Why or why not?

7. Additional comments may be recorded on the reverse of this page.

# SERIES 5000 TRAINING SESSION

## Day 1 Evaluation

| | Excellent | Good | Fair | Poor |
|---|---|---|---|---|
| 1. Rate the OVERALL value of today's session | | X | | |
| 2. Rate the value of today's topics: | | | | |
| ◆ Welcome/Strategic Direction | | | | |
| ◆ Course overview | | | | |
| ◆ Product overview | | | | |
| ◆ Product history | | | | |
| ◆ Services & Support | | X | | |
| ◆ Operating environment | | X | | |

3. What was today's most effective segment? Why?

Arrived Late because of Plane Delay

4. What was today's least effective segment? Why?

5. How would you improve today's session? - Cooler Room

6. Were the course materials appropriate? Why or why not?

yes

7. Additional comments may be recorded on the reverse of this page.

## SERIES 5000 TRAINING SESSION

### Day 1 Evaluation

| | Excellent | Good | Fair | Poor |
|---|---|---|---|---|
| 1.Rate the **OVERALL** value of today's session | | | | |
| 2. Rate the value of today's topics: | | | | |
| ◆ Welcome/Strategic Direction | | | | |
| ◆ Course overview | | | | |
| ◆ Product overview | | | | |
| ◆ Product history | | | | |
| ◆ Services & Support | | ✓ | | |
| ◆ Operating environment | | | ✓ | |

3. What was today's most effective segment? Why?

4. What was today's least effective segment? Why?

5. How would you improve today's session?

What I heard was good overall.

6. Were the course materials appropriate? Why or why not?

7. Additional comments may be recorded on the reverse of this page.

Due to late arrival, only was present during
Services and Support
Operating Environment.

## SERIES 5000 TRAINING SESSION

### Day 1 Evaluation

| | Excellent | Good | Fair | Poor |
|---|---|---|---|---|
| 1.Rate the **OVERALL** value of today's session | | ✓ | | |
| 2. Rate the value of today's topics: | | | | |
| ◆ Welcome/Strategic Direction | | ✓ | | |
| ◆ Course overview | | ✓ | | |
| ◆ Product overview | | ✓ | | |
| ◆ Product history | | ✓ | | |
| ◆ Services & Support | | ✓ | | |
| ◆ Operating environment | | ✓ | | |

3. What was today's most effective segment? Why?

4. What was today's least effective segment? Why?

Install – Methodology (Know)

5. How would you improve today's session?

Good

6. Were the course materials appropriate? Why or why not?

Yes

7. Additional comments may be recorded on the reverse of this page.

## SERIES 5000 TRAINING SESSION

### Day 1 Evaluation

| | Excellent | Good | Fair | Poor |
|---|---|---|---|---|
| 1. Rate the **OVERALL** value of today's session | X | | | |
| 2. Rate the value of today's topics: | | | | |
| ◆ Welcome/Strategic Direction | | X | | |
| ◆ Course overview | | X | | |
| ◆ Product overview | | X | | |
| ◆ Product history | | X | | |
| ◆ Services & Support | X | | | |
| ◆ Operating environment | | X | | |

3. What was today's most effective segment? Why?

Installation Services

4. What was today's least effective segment? Why?

5. How would you improve today's session?

6. Were the course materials appropriate? Why or why not?

Yes, they covered all topics

7. Additional comments may be recorded on the reverse of this page.

## SERIES 5000 TRAINING SESSION

### Day 1 Evaluation

| | Excellent | Good | Fair | Poor |
|---|---|---|---|---|
| 1.Rate the **OVERALL** value of today's session | X | | | |
| 2. Rate the value of today's topics: | | | | |
| ◆ Welcome/Strategic Direction | | X | | |
| ◆ Course overview | | X | | |
| ◆ Product overview | X | | | |
| ◆ Product history | X | | | |
| ◆ Services & Support | | X | | |
| ◆ Operating environment | | | X | |

3. What was today's most effective segment? Why?

High level overview of products.
Basic knowledge was needed!

4. What was today's least effective segment? Why?

Operating Environment. Seemed like an afterthought. Would have liked actual benefits achieved by ESA customers.

5. How would you improve today's session?

6. Were the course materials appropriate? Why or why not?

Yes

7. Additional comments may be recorded on the reverse of this page.

Thanks for putting this together! -

## SERIES 5000 TRAINING SESSION

### Day 1 Evaluation

| | Excellent | Good | Fair | Poor |
|---|---|---|---|---|
| 1.Rate the **OVERALL** value of *today's* session | | | | |
| 2. Rate the value of today's topics: | | | | |
| ◆ Welcome/Strategic Direction | ✓ | | | |
| ◆ Course overview | | ✓ | | |
| ◆ Product overview | | ✓ | | |
| ◆ Product history | ✓ | | | |
| ◆ Services & Support | | ✓ | | |
| ◆ Operating environment | | | ✓ | |

3. What was today's most effective segment? Why?

4. What was today's **least** effective segment? Why?

5. How would you improve today's session?

6. Were the course materials appropriate? Why or why not?

7. Additional comments may be recorded on the reverse of this page.

## SERIES 5000 TRAINING SESSION

### Day 1 Evaluation

| | Excellent | Good | Fair | Poor |
|---|---|---|---|---|
| 1.Rate the **OVERALL** value of today's session | ✓ | | | |
| 2. Rate the value of today's topics: | | | | |
| ◆ Welcome/Strategic Direction | ✓ | | | |
| ◆ Course overview | ✓ | | | |
| ◆ Product overview | ✓ | | | |
| ◆ Product history | | ✓ | | |
| ◆ Services & Support | | ✓ | | |
| ◆ Operating environment | | | ✓ | |

3. What was today's most effective segment? Why?

PRODUCT OVERVIEW

4. What was today's least effective segment? Why?

5. How would you improve today's session?

6. Were the course materials appropriate? Why or why not?

7. Additional comments may be recorded on the reverse of this page.

## SERIES 5000 TRAINING SESSION

### Day 1 Evaluation

| | Excellent | Good | Fair | Poor |
|---|---|---|---|---|
| 1. Rate the **OVERALL** value of today's session | | X | | |
| **2. Rate the value of today's topics:** | | | | |
| ◆ Welcome/Strategic Direction | X | | | |
| ◆ Course overview | X | | | |
| ◆ Product overview | | X | | |
| ◆ Product history | X X | | | |
| ◆ Services & Support | | X | | |
| ◆ Operating environment | | | X | |

3. What was today's most effective segment? Why?
product history - detailed graphic of time frames, products, and companies.

4. What was today's least effective segment? Why?
operating environment. Not basic enough

5. How would you improve today's session?
more time with operating environment

6. Were the course materials appropriate? Why or why not?
yes + no. good info but not explained upfront. since the presentations were pieces of the 5000 slides, it appeared disjointed + was confusing.

7. Additional comments *may* be recorded on the reverse of this page.

## SERIES 5000 TRAINING SESSION

### Day 1 Evaluation

| | Excellent | Good | Fair | Poor |
|---|---|---|---|---|
| 1.Rate the **OVERALL** value of today's session | | ✓ | | |
| 2. Rate the value of today's topics: | | | | |
| ◆ Welcome/Strategic Direction | ✓ | | | |
| ◆ Course overview | | ✓ | | |
| ◆ Product overview | ✓ | | | |
| ◆ Product history | ✓ | | | |
| ◆ Services & Support | | ✓ | | |
| ◆ Operating environment | | | | |

3. What was today's most effective segment? Why?

4. What was today's **least** effective segment? Why?

5. How would you improve today's session?

6. Were the course materials appropriate? Why or why not?

7. Additional comments may be recorded on the reverse of this page.

## SERIES 5000 TRAINING SESSION

### Day 1 Evaluation

| | Excellent | Good | Fair | Poor |
|---|---|---|---|---|
| 1.Rate the **OVERALL** value of today's session | | | | |
| 2. Rate the value of today's topics: | | | | |
| ◆ Welcome/Strategic Direction | ✓ | Like to have [illegible] addressed | | |
| ◆ Course overview | | ✓ | | |
| ◆ Product overview | | ✓ | | |
| ◆ Product history | ✓ | [illegible] graphics | | |
| ◆ Services & Support | ✓ | | | |
| ◆ Operating environment | | ✓ | | |

3. What was today's most effective segment? Why?

[illegible]

4. What was today's least effective segment? Why?

5. How would you improve today's session?

6. Were the course materials appropriate? Why or why not?

No, Thank you

7. Additional comments may be recorded on the reverse of this page.

## SERIES 5000 TRAINING SESSION

### Day 1 Evaluation

| | Excellent | Good | Fair | Poor |
|---|---|---|---|---|
| 1.Rate the **OVERALL** value of today's session | ✓ | | | |
| **2. Rate the value of today's topics:** | | | | |
| ◆ Welcome/Strategic Direction | ✓ | | | |
| ◆ Course overview | ✓ | | | |
| ◆ Product overview | | ✓ | | |
| ◆ Product history | | ✓ | | |
| ◆ Services & Support | | ✓ | | |
| ◆ Operating environment | | | ✓ | |

**3. What was today's most effective segment? Why?**

Service/Implementation very informative - All others were good, too.

**4. What was today's least effective segment? Why?**

Oper. System Environment -
Would have needed a more organized "flow" of the hardware req. since I am not very knowledgeable in that area -

**5. How would you improve today's session?**

Hard to hear questions clearly - maybe paraphrase for audience

**6. Were the course materials appropriate? Why or why not?**

Yes - good Appreciated all the prep. ahead & tools supplied.

**7. Additional comments may be recorded on the reverse of this page.**

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## SERIES 5000 TRAINING SESSION

### Day 1 Evaluation

| | Excellent | Good | Fair | Poor |
|---|---|---|---|---|
| 1.Rate the OVERALL value of today's session | | X | | |
| **2. Rate the value of today's topics:** | | | | |
| ◆ Welcome/Strategic Direction | X | | | |
| ◆ Course overview | X | | | |
| ◆ Product overview | X | | | |
| ◆ Product history | X | | | |
| ◆ Services & Support | | | X | |
| ◆ Operating environment | | X | | |

3. What was today's most effective segment? Why?

Product history invaluable
Course overview good

4. What was today's least effective segment? Why?

Spent too much time on Services & Support; could have spent
more time on Product Overview

5. How would you improve today's session?

See #4 above

6. Were the course materials appropriate? Why or why not?

yes

7. Additional comments may be recorded on the reverse of this page.

## SERIES 5000 TRAINING SESSION

### Day 1 Evaluation

| | Excellent | Good | Fair | Poor |
|---|---|---|---|---|
| **1. Rate the OVERALL value of today's session** | | ✓ | | |
| **2. Rate the value of today's topics:** | | | | |
| ◆ Welcome/Strategic Direction | | | | |
| ◆ Course overview | | | | |
| ◆ Product overview | | ✓ | | |
| ◆ Product history | | ✓ | | |
| ◆ Services & Support | ✓ | | | |
| ◆ Operating environment | ✓ | | | |

**3. What was today's most effective segment? Why?**

**4. What was today's least effective segment? Why?**

**5. How would you improve today's session?**

Tell us up front About Support functions & How we get specific Resources —

**6. Were the course materials appropriate? Why or why not?**

**7. Additional comments may be recorded on the reverse of this page.**

## SERIES 5000 TRAINING SESSION

### Day 1 Evaluation

| | Excellent | Good | Fair | Poor |
|---|---|---|---|---|
| 1.Rate the **OVERALL** value of today's session | | ✓ | | |
| 2. Rate the value of today's topics: | | | | |
| ◆ Welcome/Strategic Direction | | ✓ | | |
| ◆ Course overview | | ✓ | | |
| ◆ Product overview | | ✓ | | |
| ◆ Product history | | ✓ | | |
| ◆ Services & Support | | ✓ | | |
| ◆ Operating environment | | ✓ | | |

3. What was today's most effective segment? Why?

product overview & history were important to set the expectations and bring everyone to a level.

4. What was today's least effective segment? Why?

5. How would you improve today's session?

Services and Support Session could have been shorter.

6. Were the course materials appropriate? Why or why not?

7. Additional comments may be recorded on the reverse of this page.

## SERIES 5000 TRAINING SESSION

### Day 1 Evaluation

| | Excellent | Good | Fair | Poor |
|---|---|---|---|---|
| 1. Rate the **OVERALL** value of today's session | | | | |
| 2. Rate the value of today's topics: | | | | |
| ◆ Welcome/Strategic Direction | | ✓ | | |
| ◆ Course overview | | | | |
| ◆ Product overview | | ✓ | | |
| ◆ Product history | | ✓ | | |
| ◆ Services & Support | | ✓ | | |
| ◆ Operating environment | | ✓ | | |

3. What was today's most effective segment? Why?

Service + Support

4. What was today's least effective segment? Why?

History - I'm already familiar

5. How would you improve today's session?

6. Were the course materials appropriate? Why or why not?

7. Additional **comments** may be recorded on the reverse of this page.

# SERIES 5000 TRAINING SESSION

## Day 1 Evaluation

| | Excellent | Good | Fair | Poor |
|---|---|---|---|---|
| 1.Rate the OVERALL value of today's session | | ✓ | | |
| **2. Rate the value of today's topics:** | | | | |
| ◆ Welcome/Strategic Direction | | ✓ | | |
| ◆ Course overview | | ✓ | | |
| ◆ Product overview | | ✓ | | |
| ◆ Product history | | | ✓ | |
| ◆ Services & Support | ✓ | | | |
| ◆ Operating environment | | | ✓ | |

3. What was today's most effective segment? Why?

SERVICES

4. What was today's least effective segment? Why?

HISTORY

5. How would you improve today's session?

EXPAND ON PRODUCT OVERVIEW & DIRECTIONS.

LIMIT HISTORY TO 3-5 mins.

6. Were the course materials appropriate? Why or why not?

YES.

7. Additional comments may be recorded on the reverse of this page.

## SERIES 5000 TRAINING SESSION

**Day 2 Evaluation** 4 3 2 1

| | Excellent | Good | Fair | Poor | |
|---|---|---|---|---|---|
| **1.Rate the OVERALL value of today's session** 3.4 | \|\|\|\| 4 16 | 卌\| 6 18 | | | 10 3.4 |
| **2. Rate the value of today's topics:** | | | | | |
| ◆ Financial Core 3.7 | 卌 \|\|\|\| 9 36 | \|\|\|\| 4 12 | | | 13 3.7 |
| ◆ Medical Records 3.2 | \|\|\| 12 3 | 卌 \|\|\|\| 9 27 | \| 1 2 | | 13 3.2 |
| ◆ Appointment Scheduling 3.2 | \|\|\| 12 3 | 卌 \|\|\|\| 9 27 | \| 1 2 | | 13 3.2 |
| ◆ Resources/Sales Collateral 3.5 | 卌\| 24 6 | 卌\| 6 18 | | | 12 3.5 |
| ◆ Contracts 3 | \|\|\| 12 3 | 卌 \|\| 7 21 | \|\|\| 6 3 | | 13 3 |
| ◆ Business partners 2.8 | \|\|\| 12 3 | 卌\| 6 18 | \|\| 4 2 | \| 1 | 12 2.8 |
| ◆ Departmentals 3.4 | 卌 \| 24 6 | 卌 \| 6 18 | \| 2 1 | | 13 3.4 |
| ◆ Prospect profiles/Market Segments 3.3 | 卌 20 5 | 卌 \|\|\|\| 9 27 | \| 2 1 | | 13 3.3 |

3. What was today's most effective segment? Why?

4. What was today's least effective segment? Why?

5. How would you improve today's session?

6. Were the course materials appropriate? Why or why not?

7. Additional comments may be recorded on the reverse of this page.

## SERIES 5000 TRAINING SESSION

### Day 2 Evaluation

|  | Excellent | Good | Fair | Poor |
|---|---|---|---|---|
| **1.Rate the OVERALL value of today's session** |  | ✓ |  |  |
| **2. Rate the value of today's topics:** |  |  |  |  |
| ◆ Financial Core |  | ✓ |  |  |
| ◆ Medical Records |  | ✓ |  |  |
| ◆ Appointment Scheduling |  | ✓ |  |  |
| ◆ Resources/Sales Collateral | ✓ |  |  |  |
| ◆ Contracts |  | ✓ |  |  |
| ◆ Business partners |  | ✓ |  |  |
| ◆ Departmentals |  | ✓ |  |  |
| ◆ Prospect profiles/Market Segments | ✓ |  |  |  |

**3. What was today's most effective segment? Why?**

Q+A SESSION

**4. What was today's least effective segment? Why?**

REVIEWING THE ENTIRE COUNTRY'S OPPORTUNITIES FOR REPLACEMENT SYSTEMS.

**5. How would you improve today's session?**

**6. Were the course materials appropriate? Why or why not?**

FINE

**7. Additional comments may be recorded on the reverse of this page.**

## SERIES 5000 TRAINING SESSION

### Day 2 Evaluation

| | Excellent | Good | Fair | Poor |
|---|---|---|---|---|
| 1.Rate the **OVERALL** value of today's session | | ✓ | | |
| 2. Rate the value of today's topics: | | | | |
| ◆ Financial Core | ✓ | | | |
| ◆ Medical Records | | ✓ | | |
| ◆ Appointment Scheduling | | ✓ | | |
| ◆ Resources/Sales Collateral | | ✓ | | |
| ◆ Contracts | | ✓ | | |
| ◆ Business partners | | ✓ | | |
| ◆ Departmentals | | ✓ | | |
| ◆ Prospect profiles/Market Segments | | ✓ | | |

3. What was today's **most** effective segment? Why?

4. What was today's **least** effective segment? Why?

5. How would you improve today's session?

6. Were the course materials appropriate? Why or why not?

7. Additional comments may be recorded on the reverse of this page.

## SERIES 5000 TRAINING SESSION

### Day 2 Evaluation

| | Excellent | Good | Fair | Poor |
|---|---|---|---|---|
| **1. Rate the OVERALL value of today's session** | | ✓ | | |
| **2. Rate the value of today's topics:** | | | | |
| ◆ Financial Core | ✓ | | | |
| ◆ Medical Records | | ✓ | | |
| ◆ Appointment Scheduling | ✓ | | | |
| ◆ Resources/Sales Collateral | ✓ | | | |
| ◆ Contracts | ✓ | | | |
| ◆ Business partners | ✓ | | | |
| ◆ Departmentals | ✓ | | | |
| ◆ Prospect profiles/Market Segments | ✓ | | | |

**3. What was today's most effective segment? Why?**

END OF DAY TALKING Specific Acct. SITUATIONS

**4. What was today's least effective segment? Why?**

**5. How would you improve today's session?**

**6. Were the course materials appropriate? Why or why not?**

**7. Additional comments may be recorded on the reverse of this page.**

## SERIES 5000 TRAINING SESSION

### Day 2 Evaluation

| | Excellent | Good | Fair | Poor |
|---|---|---|---|---|
| 1.Rate the **OVERALL** value of today's session | X | | | |
| **2. Rate the value of today's topics:** | | | | |
| ◆ Financial Core | | X | | |
| ◆ Medical Records | | X | | |
| ◆ Appointment Scheduling | | X | | |
| ◆ Resources/Sales Collateral | X | | | |
| ◆ Contracts | X | | | |
| ◆ Business partners | | X | | |
| ◆ Departmentals | | X | | |
| ◆ Prospect profiles/Market Segments | X | | | |

**3. What was today's most effective segment? Why?**

Installed Base + References

**4. What was today's least effective segment? Why?**

**5. How would you improve today's session?**

I often had trouble relating the benefits back to the features (because they were shown much earlier than the benefits)

**6. Were the course materials appropriate? Why or why not?**

Excellent

**7. Additional comments may be recorded on the reverse of this page.**

## SERIES 5000 TRAINING SESSION

### Day 2 Evaluation

| | Excellent | Good | Fair | Poor |
|---|---|---|---|---|
| **1. Rate the OVERALL value of today's session** | ✓ | | | |
| **2. Rate the value of today's topics:** | | | | |
| ◆ Financial Core | ✓ | | | |
| ◆ Medical Records | | ✓ | | |
| ◆ Appointment Scheduling | | ✓ | | |
| ◆ Resources/Sales Collateral | ✓ | | | |
| ◆ Contracts | | ✓ | | |
| ◆ Business partners | | ✓ | | |
| ◆ Departmentals | ✓ | | | |
| ◆ Prospect profiles/Market Segments | | ✓ | | |

**3. What was today's most effective segment? Why?**

Departmentals was good broad overview with key points summarized

**4. What was today's least effective segment? Why?**

Final exercise lost some interest but probably due more to time of day rather than topic - What about sending copies of prospects back with Reps to follow up

**5. How would you improve today's session?**

Request the background conversationalists to either save convers. for outside class or share with group. It's hard enough to hear without undercurrent

**6. Were the course materials appropriate? Why or why not?**

Excellent tools. Thanks

**7. Additional comments may be recorded on the reverse of this page.**

## SERIES 5000 TRAINING SESSION

### Day 2 Evaluation

| | Excellent | Good | Fair | Poor |
|---|---|---|---|---|
| **1.Rate the OVERALL value of today's session** | ✓ | | | |
| **2. Rate the value of today's topics:** | | | | |
| ◆ **Financial Core** | ✓ | [illegible] | [illegible] | [illegible] |
| ◆ **Medical Records** | ✓ | | | |
| ◆ **Appointment Scheduling** | | ✓ | only because [illegible] | [illegible] |
| ◆ **Resources/Sales Collateral** | | ✓ | | |
| ◆ **Contracts** | | ✓ | | |
| ◆ **Business partners** | | | | ✓ [illegible] |
| ◆ **Departmentals** | | | ✓ | [illegible] |
| ◆ **Prospect profiles/Market Segments** | | ✓ | | |

**3. What was today's most effective segment? Why?**

Finance Core

**4. What was today's least effective segment? Why?**

Dept.
Bus. Partners

**5. How would you improve today's session?**

Would like info on business partners
this is critical

**6. Were the course materials appropriate? Why or why not?**

**7. Additional comments may be recorded on the reverse of this page.**

## SERIES 5000 TRAINING SESSION

### Day 2 Evaluation

| | Excellent | Good | Fair | Poor |
|---|---|---|---|---|
| 1.Rate the **OVERALL** value of today's session | | X | | |
| **2. Rate the value of today's topics:** | | | | |
| ◆ Financial Core | ✓ | | | |
| ◆ Medical Records | | ✓ | | |
| ◆ Appointment Scheduling | | ✓ | | |
| ◆ Resources/Sales Collateral | | | | |
| ◆ Contracts | ✓ | | | |
| ◆ Business partners | | ✓ | | |
| ◆ Departmentals | ✓ | | | |
| ◆ Prospect profiles/Market Segments | | ✓ | | |

**3. What was today's most effective segment? Why?**

Contracts - understanding negotiable items

**4. What was today's least effective segment? Why?**

**5. How would you improve today's session?**

**6. Were the course materials appropriate? Why or why not?**

Yes

**7. Additional comments may be recorded on the reverse of this page.**

## SERIES 5000 TRAINING SESSION

### Day 2 Evaluation

| | Excellent | Good | Fair | Poor |
|---|---|---|---|---|
| 1.Rate the **OVERALL** value of *today's* session | | ✓ | | |
| 2. Rate the value of today's topics: | | | | |
| ◆ Financial Core | | ✓ | | |
| ◆ Medical Records | | ✓ | | |
| ◆ Appointment Scheduling | | ✓ | | |
| ◆ Resources/Sales Collateral | | ✓ | | |
| ◆ Contracts | | ✓ | | |
| ◆ Business partners | | ✓ | | |
| ◆ Departmentals | | ✓ | | |
| ◆ Prospect profiles/Market Segments | | ✓ | | |

3. What was today's most effective segment? Why?

4. What was today's least effective segment? Why?

5. How would you improve today's session?

6. Were the course materials appropriate? Why or why not?

7. Additional comments may be recorded on the reverse of this page.

## SERIES 5000 TRAINING SESSION

### Day 2 Evaluation

| | Excellent | Good | Fair | Poor |
|---|---|---|---|---|
| **1.Rate the OVERALL value of today's session** | | ✓ | | |
| **2. Rate the value of today's topics:** | | | | |
| ◆ Financial Core | | ✓ | | |
| ◆ Medical Records | | ✓ | | |
| ◆ Appointment Scheduling | | ✓ | | |
| ◆ Resources/Sales Collateral | | ✓ | | |
| ◆ Contracts | | | ✓ | |
| ◆ Business partners | | | ✓ | |
| ◆ Departmentals | | ✓ | | |
| ◆ Prospect profiles/Market Segments | | ✓ | | |

**3. What was today's most effective segment? Why?**

FIN CORE/DEPARTMENTALS – MOST INFORMATIVE.

**4. What was today's least effective segment? Why?**

CONTRACTS – NOT IN MY REALM OF RESP.

**5. How would you improve today's session?**

ELIMINATE CONTRACTS / BUS PARTNERS.

**6. Were the course materials appropriate? Why or why not?**

YES.

**7. Additional comments may be recorded on the reverse of this page.**

# SERIES 5000 TRAINING SESSION

## Day 2 Evaluation

| | Excellent | Good | Fair | Poor |
|---|---|---|---|---|
| 1. Rate the **OVERALL** value of today's session | | | | |
| **2. Rate the value of today's topics:** | | | | |
| ◆ Financial Core | ✓ | | | |
| ◆ Medical Records | ↓ | | | |
| ◆ Appointment Scheduling | ↓ | | | |
| ◆ Resources/Sales Collateral | ↓ | | | |
| ◆ Contracts [redacted] | | | ✓ | |
| ◆ Business partners | ✓ | | | |
| ◆ Departmentals | ✓ | | | |
| ◆ Prospect profiles/Market Segments | ✓ | | | |

3. What was today's most effective segment? Why?

4. What was today's least effective segment? Why?

5. How would you improve today's session?

6. Were the course materials appropriate? Why or why not?

7. Additional comments may be recorded on the reverse of this page.

## SERIES 5000 TRAINING SESSION

### Day 2 Evaluation

| | Excellent | Good | Fair | Poor |
|---|---|---|---|---|
| **1.Rate the OVERALL value of today's session** | | | | |
| **2. Rate the value of today's topics:** | | | | |
| ◆ Financial Core | X | | | |
| ◆ Medical Records | | | X | |
| ◆ Appointment Scheduling | | | X | |
| ◆ Resources/Sales Collateral | | X | | |
| ◆ Contracts | | X | | |
| ◆ Business partners | | X | | |
| ◆ Departmentals | X | | | |
| ◆ Prospect profiles/Market Segments | | X | | |

**3. What was today's most effective segment? Why?**

Joyce was a very effective presenter

**4. What was today's least effective segment? Why?**

**5. How would you improve today's session?**

**6. Were the course materials appropriate? Why or why not?**

**7. Additional comments may be recorded on the reverse of this page.**

## SERIES 5000 TRAINING SESSION

### Day 2 Evaluation

| | Excellent | Good | Fair | Poor |
|---|---|---|---|---|
| 1.Rate the **OVERALL** value of today's session | | | | |
| 2. Rate the value of today's topics: | | | | |
| ◆ Financial Core | X | | | |
| ◆ Medical Records | | X | | |
| ◆ Appointment Scheduling | | X | | |
| ◆ Resources/Sales Collateral | | X | | |
| ◆ Contracts | | X | | |
| ◆ Business partners | | | X | |
| ◆ Departmentals | | X | | |
| ◆ Prospect profiles/Market Segments | | | X | |

3. What was today's most effective segment? Why?

F_C

4. What was today's least effective segment? Why?

Bus. Part

5. How would you improve today's session?

6. Were the course materials appropriate? Why or why not?

yes

7. Additional comments may be recorded on the reverse of this page.

## SERIES 5000 TRAINING SESSION

### Day 2 Evaluation

| | Excellent | Good | Fair | Poor |
|---|---|---|---|---|
| 1. Rate the OVERALL value of today's session | X | | | |

2. Rate the value of today's topics:

| | Excellent | Good | Fair | Poor |
|---|---|---|---|---|
| ◆ Financial Core | X | | | |
| ◆ Medical Records | X | | | |
| ◆ Appointment Scheduling | X | | | |
| ◆ Resources/Sales Collateral | X | | | |
| ◆ Contracts | | | X | |
| ◆ Business partners | X | | | |
| ◆ Departmentals | X | | | |
| ◆ Prospect profiles/Market Segments | X | | | |

3. What was today's most effective segment? Why?

Fin. Core - really needed to know this information

4. What was today's least effective segment? Why?

for IBM'ers - Contracts was least effective

5. How would you improve today's session?

6. Were the course materials appropriate? Why or why not?

7. Additional comments may be recorded on the reverse of this page.

## SERIES 5000 TRAINING SESSION

### Day 3 Evaluation

| | 4<br>Excellent | 3<br>Good | 2<br>Fair | 1<br>Poor | |
|---|---|---|---|---|---|
| 1.Rate the **OVERALL** *value* of today's session 3.6 | 36 9<br>𝍸 \|\|\|\| | 15 5<br>\|\|\|\| \| | | | 15<br>3.6 |
| 2. Rate the value of today's topics: | 48 12 | 2 | | | |
| ◆ Clinical Core 3.9 | 𝍸 𝍸 \|\| | \|\| 6 | | | 14 3.9 |
| ◆ Release 10 2.9 | \|\| 2 8 | 𝍸 \|\| 7 21 | \|\|\| 3 6 | | 12 2.9 |
| ◆ Series 5000 Strategic Direction 3.5 | 𝍸 \|\|\|\| 36 9 | \|\|\| 9 3 | \|\| 4 2 | | 15 3.5 |
| ◆ Pricing 2.6 | | 𝍸 𝍸 30 10 | 𝍸 \| 6 12 | | 16 2.6 |
| ◆ Competitive analysis 2.9 | 𝍸 \| 24 6 | \|\|\| 9 3 | 𝍸 \| 12 6 | \| 1 1 | 16 2.9 |

3. What was today's most effective segment? Why?

4. What was today's least effective segment? Why?

5. How would you improve today's session?

6. Were the course materials appropriate? Why or why not?

7. Additional comments may be recorded on the reverse of this page.

## SERIES 5000 TRAINING SESSION

### Day 3 Evaluation

| | Excellent | Good | Fair | Poor |
|---|---|---|---|---|
| 1.Rate the OVERALL value of today's session | ✓ | | | |
| 2. Rate the value of today's topics: | | | | |
| ◆ Clinical Core | ✓ | | | |
| ◆ Release 10 | | | | |
| ◆ Series 5000 Strategic Direction | ✓ | | | |
| ◆ Pricing | | ✓ | | |
| ◆ Competitive analysis | | | ✓ | |

3. What was today's most effective segment? Why?

SERIES 5000 STRATEGIC DIRECTION
& CLINICAL CORE

4. What was today's least effective segment? Why?

~~Comp~~

5. How would you improve today's session?

6. Were the course materials appropriate? Why or why not?

7. Additional comments may be recorded on the reverse of this page.

## SERIES 5000 TRAINING SESSION

### Day 2 Evaluation

| | Excellent | Good | Fair | Poor |
|---|---|---|---|---|
| **1.Rate the OVERALL value of today's session** | | ✓ | | |
| **2. Rate the *value* of today's topics:** | | | | |
| ◆ **Financial Core** | | ✓ | | |
| ◆ **Medical Records** | | ✓ | | |
| ◆ **Appointment Scheduling** | | ✓ | | |
| ◆ **Resources/Sales Collateral** | | ✓ | | |
| ◆ **Contracts** | | ✓ | | |
| ◆ **Business partners** | | ✓ | | |
| ◆ **Departmentals** | | ✓ | | |
| ◆ **Prospect profiles/Market Segments** | | ✓ | | |

**3. What was today's most effective segment? Why?**

FINANCIAL CORE - ALTHOUGH I FELT LIKE IT WAS EDUCATION BY THE FIRE HOSE METHOD

**4. What was today's least effective segment? Why?**

**5. How would you improve today's session?**

**6. Were the course materials appropriate? Why or why not?**

YES

**7. Additional comments may be recorded on the reverse of this page.**

## SERIES 5000 TRAINING SESSION

### Day 3 Evaluation

| | Excellent | Good | Fair | Poor |
|---|---|---|---|---|
| 1.Rate the **OVERALL** value of today's session | X | | | |
| **2. Rate the value of today's topics:** | | | | |
| ◆ Clinical Core | X | | | |
| ◆ Release 10 | X | | | |
| ◆ Series 5000 Strategic Direction | X | | | |
| ◆ Pricing | | X | | |
| ◆ Competitive analysis | X | | | |

**3. What was today's most effective segment? Why?**

strategic direction

**4. What was today's least effective segment? Why?**

pricing - not in my area of responsibility

**5. How would you improve today's session?**

**6. Were the course materials appropriate? Why or why not?**

**7. Additional comments may be recorded on the reverse of this page.**

## SERIES 5000 TRAINING SESSION

### Day 3 Evaluation

| | Excellent | Good | Fair | Poor |
|---|---|---|---|---|
| 1.Rate the **OVERALL** *value* of today's session | | X | | |
| **2. Rate the value of today's topics:** | | | | |
| ◆ Clinical Core | X | | | |
| ◆ Release 10 | | | X | |
| ◆ Series 5000 Strategic Direction | | | X | |
| ◆ Pricing | | | X | |
| ◆ Competitive analysis | | | X | |

**3. What was today's most effective segment? Why?**

Clinical Core

**4. What was today's least effective segment? Why?**

Pricing. Expected a retail price list.

**5. How would you improve today's session?**

Present the Competitive analysis to us, rather than have us do it.

**6. Were the course materials appropriate? Why or why not?**

Yes

**7. Additional comments may be recorded on the reverse of this page.**

## SERIES 5000 TRAINING SESSION

### Day 3 Evaluation

| | Excellent | Good | Fair | Poor |
|---|---|---|---|---|
| 1.Rate the **OVERALL** value of today's session | ✓ | | | |
| 2. Rate the value of today's topics: | | | | |
| ◆ Clinical Core | ✓ | | | |
| ◆ Release 10 | ✓ | | | |
| ◆ Series 5000 Strategic Direction | | ✓ | | |
| ◆ Pricing | | | ✓ | |
| ◆ Competitive analysis | ✓ | | | |

3. What was today's most effective segment? Why?

Competetive analysis

4. What was today's least effective segment? Why?

PRicing

5. How would you improve today's session?

0

6. Were the course materials appropriate? Why or why not?

Yes

7. Additional comments may be recorded on the reverse of this page.

## SERIES 5000 TRAINING SESSION

### Day 3 Evaluation

| | Excellent | Good | Fair | Poor |
|---|---|---|---|---|
| 1.Rate the OVERALL value of today's session | ✓ | ✓ | | |
| 2. Rate the value of today's topics: | | | | |
| ◆ Clinical Core | ✓ | | | |
| ◆ Release 10 | | ✓ | | |
| ◆ Series 5000 Strategic Direction | ✓ | | | |
| ◆ Pricing | | ✓ | | |
| ◆ Competitive analysis | | ✓ | | |

3. What was today's most effective segment? Why?

4. What was today's least effective segment? Why?

5. How would you improve today's session?

6. Were the course materials appropriate? Why or why not?

7. Additional comments may be recorded on the reverse of this page.

## SERIES 5000 TRAINING SESSION

### Day 3 Evaluation

| | Excellent | Good | Fair | Poor |
|---|---|---|---|---|
| 1.Rate the OVERALL value of today's session | ✓ | | | |
| **2. Rate the value of today's topics:** | | | | |
| ◆ Clinical Core | ✓ | | | |
| ◆ Release 10 | | ✓ | | |
| ◆ Series 5000 Strategic Direction | ✓ | | | |
| ◆ Pricing | | ✓ | | |
| ◆ Competitive analysis | ✓ | | | |

**3. What was today's most effective segment? Why?**

Competitive analysis
great way to facilitate this

**4. What was today's least effective segment? Why?**

Pricing

**5. How would you improve today's session?**

No improvement
desired

**6. Were the course materials appropriate? Why or why not?**

**7. Additional comments may be recorded on the reverse of this page.**

## SERIES 5000 TRAINING SESSION

### Day 3 Evaluation

| | Excellent | Good | Fair | Poor |
|---|---|---|---|---|
| 1. Rate the **OVERALL** value of today's session | | X | | |
| **2. Rate the value of today's topics:** | | | | |
| ◆ Clinical Core | X | | | |
| ◆ Release 10 | | | X | |
| ◆ Series 5000 Strategic Direction | | X | | |
| ◆ Pricing | | | X | |
| ◆ Competitive analysis | | | | X |

**3. What was today's most effective segment? Why?**

CCS - Good Overview.

**4. What was today's least effective segment? Why?**

Competitive Analysis — Should be Clear & Concise • list major points • use class for Current Info if Applicable

**5. How would you improve today's session?**

**6. Were the course materials appropriate? Why or why not?**

**7. Additional comments may be recorded on the reverse of this page.**

## SERIES 5000 TRAINING SESSION

### Day 3 Evaluation

| | Excellent | Good | Fair | Poor |
|---|---|---|---|---|
| **1. Rate the OVERALL value of today's session** | | | | |
| **2. Rate the value of today's topics:** | | | | |
| ◆ **Clinical Core** | ✓ | | | |
| ◆ **Release 10** | | ✓ | | |
| ◆ **Series 5000 Strategic Direction** | ✓ | | | |
| ◆ **Pricing** | | | ✓ | |
| ◆ **Competitive analysis** | | | ✓ | |

**3. What was today's most effective segment? Why?**

Clinical Core - this is what we came to hear - what makes this one better than our competition.

**4. What was today's least effective segment? Why?**

Pricing

he didn't really say very much

**5. How would you improve today's session?**

I think competitive analysis would have been better served to have info collated and then have class share past experiences

**6. Were the course materials appropriate? Why or why not?**

Yes - it is important to distribute materials before speaker begins talking

**7. Additional comments may be recorded on the reverse of this page.**

I'm impressed with the Spectrum Series 5000 the word needs to get out

## SERIES 5000 TRAINING SESSION

### Day 3 Evaluation

| | Excellent | Good | Fair | Poor |
|---|---|---|---|---|
| 1. Rate the **OVERALL** value of today's session | | X | | |
| 2. Rate the value of today's topics: | | | | |
| ◆ Clinical Core | | X | | |
| ◆ Release 10 | | | X | |
| ◆ Series 5000 Strategic Direction | | | X | |
| ◆ Pricing | | X | | |
| ◆ Competitive analysis | | | X | |

3. What was today's most effective segment? Why?

Competitive analysis – but it should have been a whole day!

4. What was today's least effective segment? Why?

N/A

5. How would you improve today's session?

6. Were the course materials appropriate? Why or why not?

7. Additional comments may be recorded on the reverse of this page.

## SERIES 5000 TRAINING SESSION

### Day 3 Evaluation

| | Excellent | Good | Fair | Poor |
|---|---|---|---|---|
| 1.Rate the **OVERALL** value of today's session | ✓ | | | |
| **2. Rate the value of today's topics:** | | | | |
| ◆ Clinical Core | ✓ | | | |
| ◆ Release 10 | | ✓ | | |
| ◆ Series 5000 Strategic Direction | ✓ | | | |
| ◆ Pricing | | ✓ | | |
| ◆ Competitive analysis | ✓ | | | |

**3. What was today's most effective segment? Why?**

Strategic direction was news to me!

**4. What was today's least effective segment? Why?**

N/A

**5. How would you improve today's session?**

Demo of system

**6. Were the course materials appropriate? Why or why not?**

Yes

**7. Additional comments may be recorded on the reverse of this page.**

# SERIES 5000 TRAINING SESSION

## Day 3 Evaluation

| | Excellent | Good | Fair | Poor |
|---|---|---|---|---|
| **1. Rate the OVERALL value of today's session** | X | | | |
| **2. Rate the value of today's topics:** | | | | |
| ◆ **Clinical Core** | | | | |
| ◆ **Release 10** | | | | |
| ◆ **Series 5000 Strategic Direction** | X | | | |
| ◆ **Pricing** | | X | | |
| ◆ **Competitive analysis** | X | | | |

**3. What was today's most effective segment? Why?**

Strategic Direction very informative

**4. What was today's least effective segment? Why?**

Pricing really did not ~~[illegible]~~ cover much..

**5. How would you improve today's session?**

**6. Were the course materials appropriate? Why or why not?**

yes

**7. Additional comments may be recorded on the reverse of this page.**

## SERIES 5000 TRAINING SESSION

### Day 3 Evaluation

| | Excellent | Good | Fair | Poor |
|---|---|---|---|---|
| 1.Rate the **OVERALL** value of today's session | X | | | |
| 2. Rate the value of today's topics: | | | | |
| ◆ Clinical Core | X | | | |
| ◆ Release 10 | | X | | |
| ◆ Series 5000 Strategic Direction | X | | | |
| ◆ Pricing | | X | | |
| ◆ Competitive analysis | | | X | |

3. What was today's most effective segment? Why?

CCS - Care Plans

4. What was today's least effective segment? Why?

Pricing

5. How would you improve today's session?

6. Were the course materials appropriate? Why or why not?

Yes

7. Additional comments may be recorded on the reverse of this page.

## SERIES 5000 TRAINING SESSION

### Day 3 Evaluation

| | Excellent | Good | Fair | Poor |
|---|---|---|---|---|
| **1. Rate the OVERALL value of today's session** | ✓ | | | |
| **2. Rate the value of today's topics:** | | | | |
| ◆ Clinical Core | ✓ | | | |
| ◆ Release 10 | | | | |
| ◆ Series 5000 Strategic Direction | | ✗ | | |
| ◆ Pricing | | | ✓ | |
| ◆ Competitive analysis | | ✓ | | |

**3. What was today's most effective segment? Why?**

CCS

**4. What was today's least effective segment? Why?**

**5. How would you improve today's session?**

**6. Were the course materials appropriate? Why or why not?**

**7. Additional comments may be recorded on the reverse of this page.**

## SERIES 5000 TRAINING SESSION

### Day 3 Evaluation

| | Excellent | Good | Fair | Poor |
|---|---|---|---|---|
| **1.Rate the OVERALL value of today's session** | ✓ | | | |
| **2. Rate the value of today's topics:** | | | | |
| ◆ Clinical Core | ✓ | | | |
| ◆ Release 10 | | ✓ | | |
| ◆ Series 5000 Strategic Direction | ✓ | | | |
| ◆ Pricing | | ✓ | | |
| ◆ Competitive analysis | ✓ | | | |

**3. What was today's most effective segment? Why?**

Competitive Session

**4. What was today's least effective segment? Why?**

Release 10

**5. How would you improve today's session?**

MAKE the Room COOLER

**6. Were the course materials appropriate? Why or why not?**

yes

**7. Additional comments may be recorded on the reverse of this page.**

# APPENDIX K

## MANAGER EVALUATION FORM

# MANAGEMENT EVALUATION OF TRAINING PROGRAMS

As we continually strive to improve the quality of our training programs, we will be asking you for your feedback and assistance. We would like you to evaluate the quality of programs we have provided to your staff in the past.

The staff member identified below recenty attended a course. We are interested in the changes in his/her behavior which you have noticed. We also want to determine how behavioral changes helped your team toward acheiving its departmental goals.

Staff member ______________________________

Class attended: Series 5000 Product Training for Sales Reps

Date of class: April 30 - May 2, 1991

I. For this staff member, to what extent have you noticed behavioral changes since the class, in the following areas:

(Circle one number per item)

| Course Objectives | No | | Some | | Great |
|---|---|---|---|---|---|
| | Behavior Change | | | | |
| 1. Describe the history of the Series 5000 | 1 | 2 | 3 | 4 | 5 |
| 2. List key Series 5000 resources | 1 | 2 | 3 | 4 | 5 |
| 3. Explain the operating environment including hardware, architecture, operating system and ADS Plus and how each of these benefits customers. | 1 | 2 | 3 | 4 | 5 |
| 4. Explain the basic functionality of each core application and departmental | 1 | 2 | 3 | 4 | 5 |
| 5. Describe the current features and benefits of each core application | 1 | 2 | 3 | 4 | 5 |
| 6. Explain the strategic direction of the Series 5000 | 1 | 2 | 3 | 4 | 5 |
| 7. Describe the install methodology | 1 | 2 | 3 | 4 | 5 |
| 8. List the third party products and how they work with the Series 5000 | 1 | 2 | 3 | 4 | 5 |
| 9. List advantages of Spectrum's products over the competition | 1 | 2 | 3 | 4 | 5 |
| 10. Describe how Spectrum's services and support strategy benefit customers | 1 | 2 | 3 | 4 | 5 |
| 11. Identify competitors strong & weak points | 1 | 2 | 3 | 4 | 5 |
| 12. Describe sales collateral available | 1 | 2 | 3 | 4 | 5 |
| 13. Describe pricing process | 1 | 2 | 3 | 4 | 5 |
| 14. Define contract priorities and options | 1 | 2 | 3 | 4 | 5 |

II. As a result of attending this class, to what extent do you feel this staff member is able to better support the overall goals of your department.

(Circle one number

| | | | | |
|---|---|---|---|---|
| Not at all | Little Support | Some Support | Good Support | Great Support |
| 1 | 2 | 3 | 4 | 5 |

Comments:____________________________________________________________

____________________________________________________________________

____________________________________________________________________

Please return this form to Carl ERicsson, HRD, Longwood by June 15th.

# APPENDIX L

## COURSE ENTRY SURVEY

**SPECTRUM**
HEALTHCARE SOLUTIONS
A PARTNERSHIP OF IBM AND BAXTER SUBSIDIARIES

**Interoffice Memorandum - For Internal Use Only**

**To:** Distribution

**Date:** March 21, 1991

**From:** Enid Crystal

You are registered for a Series 5000 Level 1 training session scheduled for April 30 through May 2. In order to be certain that the training will meet your requirements, please complete the following Course Entry Survey and return it to me by March 29:

Name [redacted]: Position: SALESMAN

The MOST IMPORTANT thing I want to learn from this course is:
HOW TO EFFECTIVELY SELL SERIES 5000

Following are the course objectives. For each one, list on a scale of 1-5 where 1 is least important, and 5 is extremely important, how important that objective is to you:

| | |
|---|---|
| • Describe the history of the Series 5000 | [✓ 1]--2--3--4--5 |
| • List key Series 5000 resources | 1--2--[✓ 3]--4--5 |
| • Explain the operating environment including hardware, architecture, operating system, and ADS Plus | 1--2--[✓ 3]--4--5 |
| • Explain the basic functionality of each core application and departmental | 1--2--3--[✓ 4]--5 |
| • Describe the current features and benefits of each core application | 1--2--3--4--[✓ 5] |
| • Explain the strategic direction of the Series 5000 | 1--2--3--[✓ 4]--5 |
| • Describe the install methodology | 1--2--[✓ 3]--4--5 |
| • List the third party products and how they work with the Series 5000 | 1--2--[✓ 3]--4--5 |
| • List advantages of Spectrum's products over the competition | 1--2--3--4--[✓ 5] |
| • Describe how Spectrum's services and support strategy benefits customers | 1--2--[✓ 3]--4--5 |
| • Identify competitors strong and weak points | 1--2--3--4--[✓ 5] |
| • Describe sales collateral available | [✓ 1]--2--3--4--5 |
| • Describe pricing process | 1--2--3--[✓ 4]--5 |
| • Define contract priorities and options | 1--2--3--[✓ 4]--5 |

What other topics would you like to see covered in this session? ____

Thank you for responding. I look forward to seeing you in April!

BEST COPY AVAILABLE

**SPECTRUM**
HEALTHCARE SOLUTIONS
A PARTNERSHIP OF IBM AND BAXTER SUBSIDIARIES

*Interoffice Memorandum - For Internal Use Only*

**To:** Distribution
**Date:** March 21, 1991
**From:** Enid Crystal Enid

You are registered for a Series 5000 Level 1 training session scheduled for April 30 through May 2. In order to be certain that the training will meet your requirements, please complete the following Course Entry Survey and return it to me by March 29:

Name: [redacted] Position: SALES REP

The MOST IMPORTANT thing I want to learn from this course is:
CURRENT FEATURES AND BENEFITS AND LONG TERM STRATEGY. SUCCESS STORIES AND WHY THEY WERE SUCCESSFUL

Following are the course objectives. For each one, list on a scale of 1-5 where 1 is least important, and 5 is extremely important, how important that objective is to you:

| | |
|---|---|
| • Describe the history of the Series 5000 | 1--[✓ 2]--3--4--5 |
| • List key Series 5000 resources | 1--2--3--4--[✓ 5] |
| • Explain the operating environment including hardware, architecture, operating system, and ADS Plus | 1--2--[✓ 3]--4--5 |
| • Explain the basic functionality of each core application and departmental | 1--2--[✓ 3]--4--5 |
| • Describe the current features and benefits of each core application | 1--2--3--4--[✓ 5] |
| • Explain the strategic direction of the Series 5000 | 1--2--3--4--[✓ 5] |
| • Describe the install methodology | 1--2--3--4--[✓ 5] |
| • List the third party products and how they work with the Series 5000 | 1--2--3--4--[✓ 5] |
| • List advantages of Spectrum's products over the competition | 1--2--3--4--[✓ 5] |
| • Describe how Spectrum's services and support strategy benefits customers | 1--2--3--4--[✓ 5] |
| • Identify competitors strong and weak points | 1--2--3--4--[✓ 5] |
| • Describe sales collateral available | 1--2--3--[✓ 4]--5 |
| • Describe pricing process | 1--2--3--[✓ 4]--5 |
| • Define contract priorities and options | 1--2--3--4--[✓ 5] |

What other topics would you like to see covered in this session? ______________________

[illegible] forward to seeing you in April!

**SPECTRUM**
HEALTHCARE SOLUTIONS
*A PARTNERSHIP OF IBM AND BAXTER SUBSIDIARIES*

Rec'd 4/3/91

**Interoffice Memorandum - For Internal Use Only**

*To:* Distribution TO:

*Date:* March 21, 1991

*From:* Enid Crystal

**You are registered for a Series 5000 Level 1 training session scheduled for April 30 through May 2. In order to be certain that the training will meet your requirements, please complete the following Course Entry Survey and return it to me by March 29:**

**Name** [redacted]**: Position:** SR. SALES REP.

**The MOST IMPORTANT thing I want to learn from this course is:**

---

**Following are the course objectives. For each one, list on a scale of 1-5 where 1 is least important, and 5 is extremely important, how important that objective is to you:**

| | |
|---|---|
| • Describe the history of the Series 5000 | 1--2--3--4--[✓ 5] |
| • List key Series 5000 resources | 1--[✓ 2]--3--4--5 |
| • Explain the operating environment including hardware, architecture, operating system, and ADS Plus | 1--[✓ 2]--3--4--5 |
| • Explain the basic functionality of each core application and departmental | 1--2--3--4--[✓ 5] |
| • Describe the current features and benefits of each core application | 1--2--3--4--[✓ 5] |
| • Explain the strategic direction of the Series 5000 | 1--2--3--4--[✓ 5] |
| • Describe the install methodology | [✓ 1]--2--3--4--5 |
| • List the third party products and how they work with the Series 5000 | 1--2--[✓ 3]--4--5 |
| • List advantages of Spectrum's products over the competition | 1--2--3--4--[✓ 5] |
| • Describe how Spectrum's services and support strategy benefits customers | 1--2--3--4--[✓ 5] |
| • Identify competitors strong and weak points | 1--2--3--4--[✓ 5] |
| • Describe sales collateral available | 1--2--3--[✓ 4]--5 |
| • Describe pricing process | 1--2--3--[✓ 4]--5 |
| • Define contract priorities and options | 1--2--3--[✓ 4]--5 |

What other topics would you like to see covered in this session?

WHAT COMPETITIVE SYSTEMS DO WE INTERFACE TO & FROM?
DESCRIBE CLIENT BASE LIKES & DISLIKES, REFERENCES.

Thank you for responding. I look forward to seeing you in April!

**SPECTRUM**
HEALTHCARE SOLUTIONS
A PARTNERSHIP OF IBM AND BAXTER SUBSIDIARIES

*Interoffice Memorandum - For Internal Use Only*

**To:** Distribution

**Date:** March 21, 1991

**From:** Enid Crystal

You are registered for a Series 5000 Level 1 training session scheduled for April 30 through May 2. In order to be certain that the training will meet your requirements, please complete the following Course Entry Survey and return it to me by March 29:

Name: [redacted] : Position: Sales

The MOST IMPORTANT thing I want to learn from this course is:
functionality, competition to use in a sales call

Following are the course objectives. For each one, list on a scale of 1-5 where 1 is least important, and 5 is extremely important, how important that objective is to you:

| | |
|---|---|
| • Describe the history of the Series 5000 | 1--2--[✓ 3]--4--5 |
| • List key Series 5000 resources | 1--2--[✓ 3]--4--5 |
| • Explain the operating environment including hardware, architecture, operating system, and ADS Plus | 1--[✓ 2]--3--4--5 |
| • Explain the basic functionality of each core application and departmental | 1--2--3--4--[✓ 5] |
| • Describe the current features and benefits of each core application | 1--2--3--4--[✓ 5] |
| • Explain the strategic direction of the Series 5000 | 1--2--3--4--[✓ 5] |
| • Describe the install methodology | 1--[✓ 2]--3--4--5 |
| • List the third party products and how they work with the Series 5000 | 1--2--[✓ 3]--4--5 |
| • List advantages of Spectrum's products over the competition | 1--2--3--4--[✓ 5] |
| • Describe how Spectrum's services and support strategy benefits customers | 1--2--[✓ 3]--4--5 |
| • Identify competitors strong and weak points | 1--2--3--4--[✓ 5] |
| • Describe sales collateral available | [✓ 1]--2--3--4--5 |
| • Describe pricing process | [✓ 1]--2--3--4--5 |
| • Define contract priorities and options | 1--[✓ 2]--3--4--5 |

What other topics would you like to see covered in this session? ______________________

Thank you for responding. I look forward to seeing you in April!

**SPECTRUM**
**HEALTHCARE SOLUTIONS**
*A PARTNERSHIP OF IBM AND BAXTER SUBSIDIARIES*

***Interoffice Memorandum - For Internal Use Only***

***To:*** Distribution

***Date:*** March 21, 1991

***From:*** Enid Crystal

You are registered for a Series 5000 Level 1 training session scheduled for April 30 through May 2. In order to be certain that the training will meet your requirements, please complete the following Course Entry Survey and return it to me by March 29:

Name [redacted] : Position: SALES

The MOST IMPORTANT thing I want to learn from this course is:
OVERVIEW OF ENTIRE PRODUCT

Following are the course objectives. For each one, list on a scale of 1-5 where 1 is least important, and 5 is extremely important, how important that objective is to you:

| | |
|---|---|
| Describe the history of the Series 5000 | [✓ 1]--2--3--4--5 |
| List key Series 5000 resources | 1--2--3--[✓ 4]--5 |
| Explain the operating environment including hardware, architecture, operating system, and ADS Plus | 1--2--3--[✓ 4]--5 |
| Explain the basic functionality of each core application and departmental | 1--2--3--4--[✓ 5] |
| Describe the current features and benefits of each core application | 1--2--3--4--[✓ 5] |
| Explain the strategic direction of the Series 5000 | 1--2--3--4--[✓ 5] |
| Describe the install methodology | [✓ 1]--2--3--4--5 |
| List the third party products and how they work with the Series 5000 | 1--2--[✓ 3]--4--5 |
| List advantages of Spectrum's products over the competition | 1--2--3--4--[✓ 5] |
| Describe how Spectrum's services and support strategy benefits customers | 1--2--3--[✓ 4]--5 |
| Identify competitors strong and weak points | 1--2--3--4--[✓ 5] |
| Describe sales collateral available | 1--2--[✓ 3]--4--5 |
| Describe pricing process | 1--[✓ 2]--3--4--5 |
| Define contract priorities and options | 1--2--[✓ 3]--4--5 |

What other topics would you like to see covered in this session? PCS TO 5000 SERIES
MARKETING IDEAS, STRATAGIES

Thank you for responding. I look forward to seeing you in April!

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**SPECTRUM**
HEALTHCARE SOLUTIONS
*A PARTNERSHIP OF IBM AND BAXTER SUBSIDIARIES*

***Interoffice Memorandum - For Internal Use Only***

Enid
Look forward to seeing you in person!
Laura

**To:** Distribution

**Date:** March 21, 1991

**From:** Enid Crystal

**You are registered for a Series 5000 Level 1 training session scheduled for April 30 through May 2. In order to be certain that the training will meet your requirements, please complete the following Course Entry Survey and return it to me by March 29:**

**Name** [redacted] **: Position:** SALES SUPPORT REP. (S5000 EAST REGION)

**The MOST IMPORTANT thing I want to learn from this course is:**
history & direction of Clinicals for S5000, advantages over competitors

**Following are the course objectives. For each one, list on a scale of 1-5 where 1 is least important, and 5 is extremely important, how important that objective is to you:**

| | |
|---|---|
| • Describe the history of the Series 5000 | 1--2--3--4--[✓ 5] |
| • List key Series 5000 resources | 1--2--3--4--[✓ 5] |
| • Explain the operating environment including hardware, architecture, operating system, and ADS Plus | 1--2--3--[✓ 4]--5 |
| • Explain the basic functionality of each core application and departmental | 1--2--3--4--[✓ 5] FOR CLINICALS |
| • Describe the current features and benefits of each core application | 1--2--3--4--[✓ 5] |
| • Explain the strategic direction of the Series 5000 | 1--2--3--4--[✓ 5] |
| • Describe the install methodology | 1--2--[✓ 3]--4--5 |
| • List the third party products and how they work with the Series 5000 | 1--2--[✓ 3]--4--5 |
| • List advantages of Spectrum's products over the competition | 1--2--3--4--[✓ 5] |
| • Describe how Spectrum's services and support strategy benefits customers | 1--2--3--[✓ 4]--5 |
| • Identify competitors strong and weak points | 1--2--3--4--[✓ 5] |
| • Describe sales collateral available | 1--2--3--4--[✓ 5] |
| • Describe pricing process | 1--2--[✓ 3]--4--5 |
| • Define contract priorities *and options* | 1--[✓ 2]--3--4--5 |

What other topics would you like to see covered in this session? ____________________

Thank you for responding. I look forward to seeing you in April!

**SPECTRUM**
HEALTHCARE SOLUTIONS
*A PARTNERSHIP OF IBM AND BAXTER SUBSIDIARIES*

***Interoffice Memorandum - For Internal Use Only***

**To:** Distribution

**Date:** March 21, 1991

**From:** Enid Crystal

You are registered for a Series 5000 Level 1 training session scheduled for April 30 through May 2. In order to be certain that the training will meet your requirements, please complete the following Course Entry Survey and return it to me by March 29:

Name [redacted]: Position: Senior Sales Rep.

The MOST IMPORTANT thing I want to learn from this course is:
Why an 800 bed hospital should buy SSK rather than HBO, TDS, Sn

Following are the course objectives. For each one, list on a scale of 1-5 where 1 is least important, and 5 is extremely important, how important that objective is to you:

| | |
|---|---|
| • Describe the history of the Series 5000 | [✓ 1]--2--3--4--5 |
| • List key Series 5000 resources | 1--2--3--[✓ 4]--5 |
| • Explain the operating environment including hardware, architecture, operating system, and ADS Plus | 1--2--3--[✓ 4]--5 |
| • Explain the basic functionality of each core application and departmental | 1--2--3--[✓ 4]--5 |
| • Describe the current features and benefits of each core application | 1--2--3--4--[✓ 5] |
| • Explain the strategic direction of the Series 5000 | 1--2--3--[✓ 4]--5 |
| • Describe the install methodology | 1--[✓ 2]--3--4--5 |
| • List the third party products and how they work with the Series 5000 | 1--2--[✓ 3]--4--5 |
| • List advantages of Spectrum's products over the competition | 1--2--3--4--[✓ 5] * ** |
| • Describe how Spectrum's services and support strategy benefits customers | 1--2--3--[✓ 4]--5 |
| • Identify competitors strong and weak points | 1--2--3--4--[✓ 5] |
| • Describe sales collateral available | 1--2--[✓ 3]--4--5 |
| • Describe pricing process | 1--2--[✓ 3]--4--5 |
| • Define contract priorities and options | 1--2--3--[✓ 4]--5 |

What other topics would you like to see covered in this session? ____________

Thank you for responding. I look forward to seeing you in April!

**SPECTRUM**
**HEALTHCARE SOLUTIONS**
*A PARTNERSHIP OF IBM AND BAXTER SUBSIDIARIES*

***Interoffice Memorandum · For Internal Use Only***

**To:** Distribution
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**From:** Enid Crystal

You are registered for a Series 5000 Level 1 training session scheduled for April 30 through May 2. In order to be certain that the training will meet your requirements, please complete the following Course Entry Survey and return it to me by March 29:

Name [redacted] : Position: Proposal Writer [illegible]

The MOST IMPORTANT thing I want to learn from this course is: [illegible]

Following are the course objectives. For each one, list on a scale of 1-5 where 1 is least important, and 5 is extremely important, how important that objective is to you:

| | |
|---|---|
| • Describe the history of the Series 5000 | 1--2--[✓ 3]--4--5 |
| • List key Series 5000 resources | 1--2--3--4--[✓ 5] |
| • Explain the operating environment including hardware, architecture, operating system, and ADS Plus | 1--2--3--4--[✓ 5] |
| • Explain the basic functionality of each core application and departmental | 1--2--3--4--[✓ 5] |
| • Describe the current features and benefits of each core application | 1--2--3--4--[✓ 5] |
| • Explain the strategic direction of the Series 5000 | 1--2--3--4--[✓ 5] |
| • Describe the install methodology | 1--2--[✓ 3]--4--5 |
| • List the third party products and how they work with the Series 5000 | 1--2--[✓ 3]--4--5 |
| • List advantages of Spectrum's products over the competition | 1--2--[✓ 3]--4--5 |
| • Describe how Spectrum's services and support strategy benefits customers | 1--2--[✓ 3]--4--5 |
| • Identify competitors strong and weak points | 1--[✓ 2]--3--4--5 |
| • Describe sales collateral available | [✓ 1]--2--3--4--5 |
| • Describe pricing process | 1--[✓ 2]--3--4--5 |
| • Define contract priorities and options | [✓ 1]--2--3--4--5 |

What other topics would you like to see covered in this session?

Thank you for responding. I look forward to seeing you in April!

# APPENDIX M

## SALES MANAGER QUESTIONNAIRE

**SPECTRUM**
HEALTHCARE SOLUTIONS
A PARTNERSHIP OF IBM AND BAXTER SUBSIDIARIES

**Interoffice Memorandum - For Internal Use Only**

**To:** Sales Managers
Sales Support Mgrs.

**Date:** February 11, 1991

**From:** Enid Crystal

cc: G. Kiser
Area VPs

**RE: LEVEL 1 PRODUCT TRAINING COURSE COVERING SERIES 5000**

We are building a course which will cover basic product knowledge of the Series 5000. In order to make sure that there is a real need for this course, I would like to know who from your staff would be interested in attending.

The course is tentatively scheduled for the week of **March 25th** in Hauppauge. After attending this course, participants will be able to explain features, functions, benefits of Series 5000 applications and describe Spectrum's advantages over the competition.

Please write the names of the people from your group who could benefit from this course below: (This is not a registration form, just a show of interest)

Also, if there are any specific **topics** you would like to see covered in this course, please write them here:

Please return this form to me by **February 22**. Thank you!

**SPECTRUM**
HEALTHCARE SOLUTIONS
*A PARTNERSHIP OF IBM AND BAXTER SUBSIDIARIES*

***Interoffice Memorandum · For Internal Use Only***

***To:*** Sales Managers
Sales Support Mgrs.

***Date:*** February 11, 1991

***From:*** Enid Crystal

Enid

cc: G. Kiser
Area VPs

**RE: LEVEL 1 PRODUCT TRAINING COURSE COVERING SERIES 5000**

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The course is tentatively scheduled for the week of **March 25th** in Hauppauge. After attending this course, participants will be able to explain features, functions, benefits of Series 5000 applications and describe Spectrum's advantages over the competition.

Please write the names of the people from your group who could benefit from this course below: (This is not a registration form, just a show of interest)

erry Shoptaugh

Kathy Jenkins

Also, if there are any specific **topics** you would like to see covered in this course, please write them here:

Stress benefits of system & how we fare good & bad against the competion.

Please return this form to me by **February 22**. Thank you!

**SPECTRUM**
HEALTHCARE SOLUTIONS
A PARTNERSHIP OF IBM AND BAXTER SUBSIDIARIES

*Interoffice Memorandum · For Internal Use Only*

**To:** Sales Managers
Sales Support Mgrs.

**Date:** February 11, 1991

**From:** Enid Crystal

Enid

cc: G. Kiser
Area VPs

**RE: LEVEL 1 PRODUCT TRAINING COURSE COVERING SERIES 5000**

We are building a course which will cover basic product knowledge of the Series 5000. In order to make sure that there is a real need for this course, I would like to know who from your staff would be interested in attending.

The course is tentatively scheduled for the week of **March 25th** in Hauppauge. After attending this course, participants will be able to explain features, functions, benefits of Series 5000 applications and describe Spectrum's advantages over the competition.

Please write the names of the people from your group who could benefit from this course below: (This is not a registration form, just a show of interest)

Bob Zakrski
Chris Ryan
BarbaraJean Mankason
Erica Berglund

Also, if there are any specific **topics** you would like to see covered in this course, please write them here:

Series 5000 (mainframe) technology
advantages + disadvantages over Series 4000
" " " Competition
Product direction and future

Please return this form to me by **February 22**. Thank you!

**SPECTRUM**
HEALTHCARE SOLUTIONS
A PARTNERSHIP OF IBM AND BAXTER SUBSIDIARIES

**Interoffice Memorandum · For Internal Use Only**

**To:** Sales Managers
Sales Support Mgrs.

**Date:** February 11, 1991

**From:** Enid Crystal

Enid

cc: G. Kiser
Area VPs

**RE: LEVEL 1 PRODUCT TRAINING COURSE COVERING SERIES 5000**

We are building a course which will cover basic product knowledge of the Series 5000. In order to make sure that there is a real need for this course, I would like to know who from your staff would be interested in attending.

The course is tentatively scheduled for the week of **March 25th** in Hauppauge. After attending this course, participants will be able to explain features, functions, benefits of Series 5000 applications and describe Spectrum's advantages over the competition.

Please write the names of the people from your group who could benefit from this course below: (This is not a registration form, just a show of interest)

- Rhonda Wilson
- 1-2 sales reps
(to be hired soon ...)

Also, if there are any specific **topics** you would like to see covered in this course, please write them here:

- general overview of hardware ie. S/370 and S/390 ...
- customer sites

Please return this form to me by **February 22**. Thank you!

Thanks!
Rhonda Wilson
Sales Support Manager
Spectrum - Canada.

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